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The OIL WEEKLY

OIL and GAS ENGINEERING

FOR OIL AND GAS PRODUCERS AND PIPE LINE MEN

THE WEEK'S NEWS INTERPRETED

MAR - 2 1936
GEOLOGICAL DIVISION

Leaders FOR 16 YEARS

HUGHES TOOL JOINTS

STOCKED FOR IMMEDIATE SHIPMENT
HUGHES "ACME" THREAD REGULAR
HUGHES "A.P.I." THREAD REGULAR
HUGHES "ACME" FULL HOLE
HUGHES "A.P.I." FULL HOLE

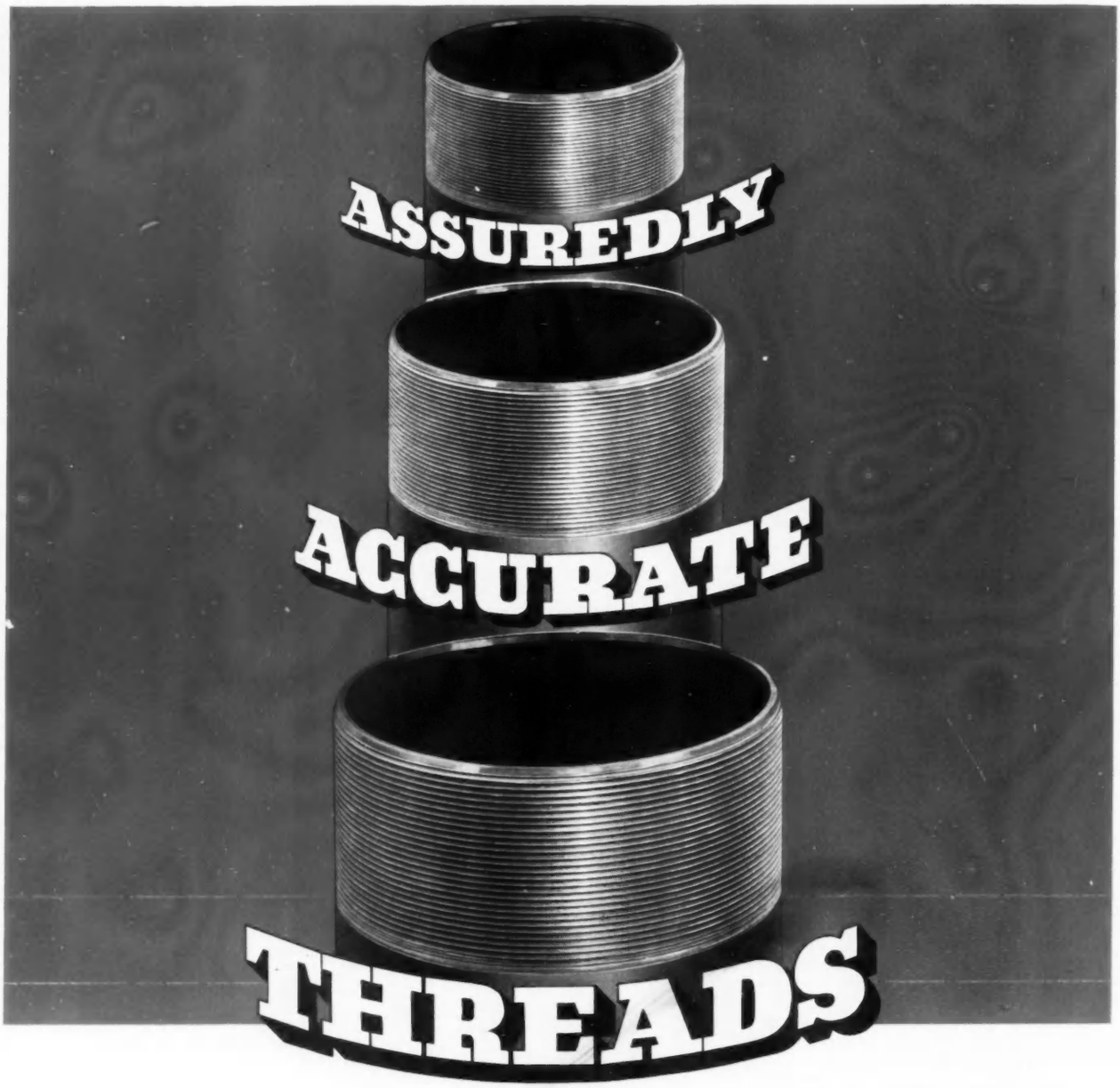
HUGHES TOOL COMPANY

MAIN PLANT AND OFFICE, HOUSTON, TEXAS

EXPORT OFFICE, 30 ROCKEFELLER PLAZA, NEW YORK CITY

SERVICE PLANTS: LOS ANGELES, CALIF. OKLAHOMA CITY, OKLA. MIDLAND, TEXAS

VOLUME 78 SEPTEMBER 9, 1935 NUMBER 13



In making up a string of Pittsburgh Seamless Drill Pipe or Casing, it is not a matter of matching threads for make-up but rather a matter of standardized interchangeability. This fact is backed by accurately made precision cutting tools, periodically checked in our laboratories for any deviation or possible errors. Adequate inspection is one of the reasons for the threading perfection for which Pittsburgh Seamless is noted. Another reason is the quality of steel which permits the cutting of smooth as well as accurate threads. This results in real economy and protection to the user. Assure yourself this precision accuracy in your next order for drill pipe, casing or tubing. In a word say: "Pittsburgh."

Pittsburgh Seamless

DRILL PIPE • CASING • OIL WELL TUBING

Pittsburgh Steel Company . . . Pittsburgh, Pa.

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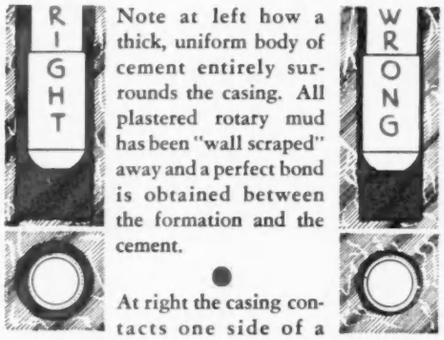
Here's a Positive Low-Cost Way to Secure Permanent WATER SHUT-OFFS!

First "Bottleneck" the Hole with a BAKER ROTARY WALL SCRAPER by enlarging the last 20 to 50 feet of hole to insure ample clearance around the shoe and casing for the complete distribution of a satisfactory body of cement.

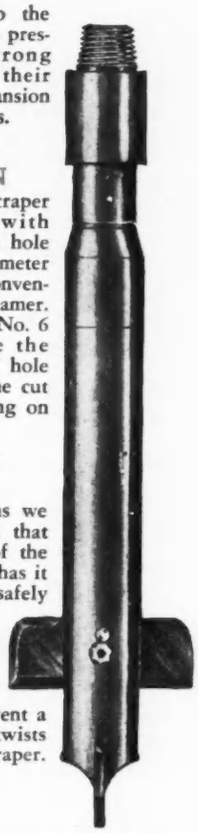


Note at left how a thick, uniform body of cement entirely surrounds the casing. All plastered rotary mud has been "wall scraped" away and a perfect bond is obtained between the formation and the cement.

At right the casing contacts one side of a drilled hole and the thin layer of cement cannot provide an effective or permanent water shut-off.

How the BAKER WALL SCRAPER operates . . .

After running-in to the desired depth, pump pressure opens the strong blades, which cut their way out to full expansion as rotation continues.



AMAZING EXPANSION

Any Baker Wall Scraper can be equipped with blades to enlarge a hole far beyond the diameter possible with a conventional type underreamer. As an example, the No. 6 Size can increase the diameter of an 8¼" hole to 19"—either in one cut or in steps depending on the formation.

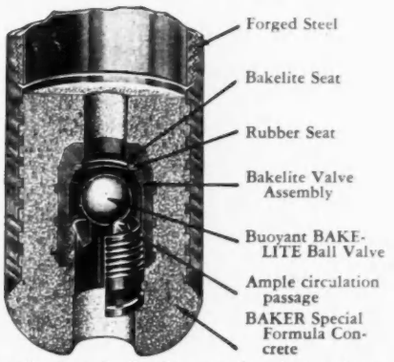
COMPLETE SAFETY

In thousands of runs we have no knowledge that through any fault of the Baker Wall Scraper has it ever failed to come safely out of the hole. An additional safety factor is the small O.D. which makes it easy to "wash over" the body in event a weak drilling string twists off above the wall scraper.

Then use one of these Units or Combinations for the best cementing results . . .

BAKER CEMENT FLOAT SHOE

the most widely used unit



is safe for strings of casing of any length. It guides the casing evenly down the hole, and being stronger than the collapsing strength of casing is perfectly safe for longest, heaviest strings. The large circulation areas permit free passage of cement and the Bakelite ball (which floats in rotary mud or cement slurry) at the first reversal of pressure instantly forms a leakproof seal against the rubber ring which is strongly reinforced by the Bakelite valve cage anchored in concrete.

You must have all three . . .

STRENGTH
VALVE EFFICIENCY
DRILLABILITY

and in all Baker *Cement* Equipment you know that the internal plug can be easily drilled out. The bakelite and concrete are drilled up into small, harmless fragments and circulate out of the hole. There is no metal or other dangerous material left to prevent immediate coring, or deflect the bit and start a crooked hole.

Other Units and Combinations

For soft or caving formations use the Baker Cement Whirler Shoe which has side ports in addition to the bottom hole. Even if set on bottom the side outlets whirl the cement upward (without channeling). Positive water shut-off usually is obtained.

A modern combination to stop the cementing plug a joint or two above bottom and retain cement tailings inside the casing. With a Baker Cement Guide Shoe on the end of the string and a Baker Cement Float Collar above to your specifications, perfect results are insured.

Where every possible precaution is desired, we recommend using a Baker Cement Float Shoe in combination with a Baker Cement Float Collar a joint or two above bottom. This safety insurance is so inexpensive when compared to the cost of a well, that many modern operators insist upon this combination.

BAKER OIL TOOLS, INC.

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COALINGA • TAFT • HOUSTON • OKLAHOMA CITY • TULSA • NEW YORK

WATER EXCLUSION IS NO LONGER A SERIOUS PROBLEM IF YOU USE THE MODERN BAKER CEMENTING METHOD

REDUCE LIFTING COSTS by selecting sucker rods to fit pumping conditions

● Producers are getting results when rods fit well conditions. Lifting costs are lower, rod breaks are cut and down time is reduced. In following this sound engineering procedure of fitting rods to well conditions, leading production engineers and superintendents say that two steps are necessary.

First, pumping conditions must be analyzed, and, second, rod records must be studied so that the rod which has given the best performance under similar conditions will be chosen.

We will be glad to assist in analyzing your well conditions and when it comes to reviewing rod records we not only have a wealth of engineering information in our Field Engineering Department, but our experience covers 44 years as the leading sucker rod manufacturer. Furthermore, since we make a complete line—a type to fit every condition—we can furnish you the rod you should use.

For quick action, ask a Jones Field Representative or the nearest jobber stocking Jones Rods or write our Field Engineering Department at Tulsa for a Service Record-Data Sheet. The S. M. Jones Company, 624 Segur Avenue, Toledo, Ohio, McBirney Bldg., Tulsa, Okla.

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JONESUCKERODS

A TYPE TO FIT EVERY PUMPING CONDITION

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THE OIL WEEKLY

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Stronger, Tighter, Safer Decks

Battery of Low 500-bbl. Parkersburg Bolted Steel Tanks with Corrugated Decks.

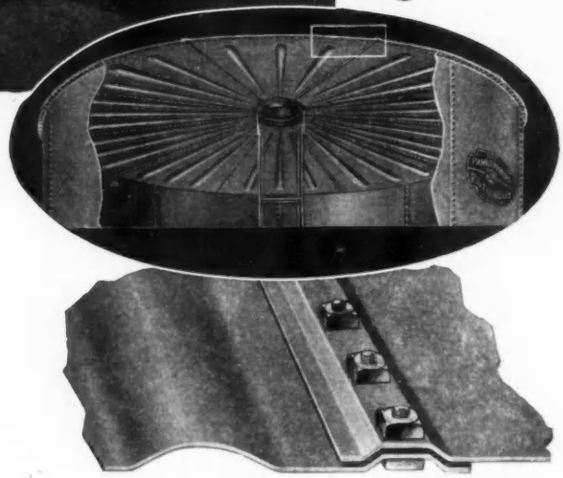
CORRUGATED DECKS . . . the first outstanding improvement in tank deck design since the development of the bolted steel tank. This is an exclusive patented feature obtainable only on Parkersburg Tanks.

Deep corrugations pressed into each deck segment and pressed grooves along the radial seams give an overall stiffness to the complete deck that is not obtainable in other types of construction. The absence of rafters and channels for deck support reduces the source of scale in sour crude areas and eliminates the danger of collapse from corroded members.

All sheets are corrosion-resisting, copper-bearing steel, aluminum coated; the underside of deck segments coated with REELKOTE, a Bakelite base enamel highly resistant to the corrosive action of sour oils and sulphur gases.

Hundreds of satisfied users will attest the fact that the Corrugated Deck is the strongest, tightest and safest on the market.

Specify: bolted steel tanks with corrugated decks, gas-tight fittings, and fire-proof steel stairways and runways . . . *by Parkersburg.*



Note how channels are an integral part of the sheets and shaped to prevent bolt heads from turning. This assures perfectly matched, gas-tight joints, while increasing the stiffness of the deck.

Gas-Tight Accessories

Parkersburg gas-tight accessories provide positive protection by automatically controlling both pressure and vacuum. Made of aluminum throughout . . . hand-ground for accurate seating . . . fool-proof in operation.

3-in-1 Valve

A valve for either pressure or vacuum relief or as a gauge hole cover. Simple, automatic . . . no springs to break . . . no gaskets to deteriorate . . . no valve stems to stick. An exclusive safety feature is that cover cannot be opened without checking its function as a valve.

SERVICE

● A complete Service Organization is maintained at each District office; practical production engineers are always ready to assist producers --- large or small --- in the solution of their problems

Complete stocks of tank parts and a speedy erection service are available at all Parkersburg Branches.

THE PARKERSBURG RIG AND REEL CO.

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THE OIL WEEKLY
FOR OIL AND GAS PRODUCERS AND PIPE LINE MEN
ENGINEERING • NEWS • STATISTICS

WARREN L. BAKER, Editor

. . . this Week

STATISTICALLY, August was another month of continued improvement for the industry. Both crude and gasoline stocks registered material declines. Although production of oil was slightly lower than in July, it represented a greater excess over the indicated market demand due to lower requirements and overproduction in California. Field activities, based on completions, was greater than in July, there being 62.8 completions daily. The only unfavorable occurrence was a crude price cut in California, attributed to the failure of producers to restrict output. **Page 8.**

A CLOSE analysis of drilling activities develops some interesting conclusions. Although the number of completions are back to the average of the 1920's the number of rigs are not nearly as high, indicating rigs in service today are able to make more footage in less time. Another interesting development is the increase in the average depth of holes. These are interesting and significant trends that indicate the footage drilled per year will increase materially, although fewer rigs may be running and fewer wells may be finished. **Page 21.**

PIPE line construction work took a big jump last week when several important projects were announced. A 300-mile, 24-inch natural gas line will be constructed from Rockville, Indiana, to Detroit. This will supply the latter with Texas Panhandle gas, and apparently kills hopes held by some of a state-federal owned line from the Panhandle to Detroit. Western Kansas fields are to get needed pipe line facilities, with two new lines announced last week. One will be 75 miles long and the other 45 miles. In Wyoming work was started on a 217-mile gas line running into Nebraska. A 20-mile line is to be built from the new Crystal field in Michigan to St. Louis, Michigan. **Page 58.**

THE Rodessa field, North Louisiana, gained additional attention last week with completion of the second oil well, which made more than 500 barrels hourly. It is with pride THE OIL WEEKLY points to the map published on pages 26 and 27 of the August 26 issue, which showed this well to be in the oil producing area, and which also forecast that the well completed two weeks ago would be a gas producer.

MODERNIZED vocational training classes have overcome obstacles previously attached to employe training schools. As a result their organization and the benefits derived from them are spreading rapidly. The Texas Panhandle has some outstanding vocational schools that offer interesting and helpful courses. The result has been schools of exceptional success. **Page 41.**

The Oil Man's Calendar

SEPTEMBER
18-20 National Petroleum Association, Atlantic City, New Jersey.
23-28 Oil and Gas Exposition, Mt. Pleasant, Michigan.

OCTOBER
10-12 A.I.M.E. Petroleum Division, Mid-Continent Section, Houston, Texas.
16-17 American Association of Petroleum Geologists, Mid Year Meeting, Mexico City, Mexico.

NOVEMBER
4-5 Independent Petroleum Association of America, Annual Meeting, Dallas, Texas.
11-14 American Petroleum Institute, Annual Meeting, Biltmore Hotel, Los Angeles. California Natural Gasoline Association, Los Angeles.

MARCH, 1936
19-21 American Association of Petroleum Geologists, Tulsa, Oklahoma.

APRIL
16-17 National Petroleum Association, Cleveland, Ohio.

AN independent operator, H. H. Coffield, has found reconditioning of small wells profitable. Reworking of approximately 1000 shallow stripper wells has given him considerable information on the handling of such production. There are many factors to consider in such work, but he now has developed regular procedures that are interesting and valuable. After preliminary studies of conditions, he makes careful tests and records to determine the ability of a well to produce commercially. Mechanics, of course, also enter into the work. **Page 46.**

RECENT gas engine combustion studies made at The University of Oklahoma have shown that closer attention to the air-fuel ratio frequently will increase operating efficiencies. Sometimes very small changes in the adjustment of the air control valve will make marked differences in the air-fuel ratio. The tests and conclusions of this study are published in this issue. **Page 25.**

A SCREEN and packer setting method new to the Gulf Coast is being used in the Bosco, Louisiana, field. Briefly, it consists of drilling a "pilot" hole into the oil sand, setting casing on top of the sand, then running a liner and slotted pipe into the pilot hole with a packer. The wells are washed in to completion. **Page 50.**

GAS produced in Lea County, New Mexico, which has become an important reserve, contains hydrogen sulphide, and cleaning it of this undesired content is one of the chief operating problems for pipe line concerns. By erecting purification plants, consisting of two sets of scrubbing towers, the gas is cleaned. These and other gas transmission problems found in this district are discussed in an interesting article. **Page 35.**

August Encouraging

AS ALL STATISTICS CONTINUE TO SHOW IMPROVEMENT

By JACK LOGAN, Associate Editor

DESPITE the fact that the end of the month brought a crude price break in California, August was a month of predominately favorable statistics for the petroleum industry.

For the United States as a whole, August furnished encouraging reductions in stocks of both crude oil and gasoline. These inventory reductions reflected general effectiveness in holding the output of wells and refineries within market requirements.

In California, of course, the price cutting was attributed to failure of the producers to restrict their output within economic limits; as well as to an excess of gasoline on the markets, presumably due to ready accessibility of plants to surplus and underpriced crude.

East of California, however, there was again in August success in all oil control efforts. The important oil producing states of the Mid-Continent all have effective state-regulated oil control programs. And during the month the state authorities took particular care to prescribe allowables within or under demand figures as estimated by the Bureau of Mines. Consequently, there was hope in the Mid-Continent that the markets east of California would remain comparatively firm, even in the face of the disturbed situation in California.

The relatively favorable prices that prevailed generally during August apparently served to encourage drilling of wells. Meanwhile weather conditions no doubt had a similar effect. Consequently, drilling activity was greater than in July and only fractionally lower than in May, which represented the peak month of the year in field work and the highest in five years.

Stocks Decline

The long sustained shrinkage of crude oil stocks is indicated to have continued during August. On August 17, the stocks were approximately three million barrels lower than on July 27. During the remainder of the month of August further decline is indicated, due to some decrease of crude production, in the face of sustained refinery operations and high consumption of oils. The Bureau of Mines reported total crude stocks of 311,515,000 barrels on hand August 17, in the weekly report embracing 98 percent of the total stocks, exclusive of producers' stocks. On July 27, the similar figure was 314,335,000 barrels. The latest complete figure of the Bureau of Mines on crude stocks showed a total of 334,757,000 barrels at the end of June.

There have been some fears that the industry would not successfully curtail refinery operations in preparation for declining seasonal demand, with the close of the vacation season. But during August the industry proved that it was able to meet the situation satisfactorily. To offset prospective decline of gasoline consumption, the industry substantially reduced its gasoline inventories.

As of August 24, the American Petroluem Institute reported total stocks of finished gasoline aggregating 44,751,000 barrels. That was more than three million barrels less than the total held at the beginning of the month. On July 27, the gasoline stocks totaled 48,157,000 barrels.

Crude Production Down

United States crude oil production during August averaged 2,665,272 barrels daily, which was about 42,000 barrels per day less than in July. However, the indicated market demand for August was less than in July; and the August production represented more excess than did the July output. The August figure was about 65,000 barrels per day higher than the market requirements as estimated by the Petroleum Administrative Board. It should be noted, however, that recently it came to light that the Bureau of Mines for August had shown a more liberal figure on demand than that given out by the P. A. B. As compared with the 2,665,272 barrels per day reported production, the Bureau of Mines showed for August an estimate of 2,655,000 barrels demand daily. Thus the reported production was only slightly above that estimate.

The figures here given on United States production represent only reported production, and do not include the surreptitiously produced output. Production of that nature occurs chiefly in East Texas and if added to the reported production would substantially increase the total. During the month the East Texas hot oil apparently averaged around 40,000 barrels daily. If this hot oil is taken into consideration, the actual production does not compare so favorably with even the Bureau of Mines figure on August demand. Presumably the P. A. B. was making allowance for the inevitable hot oil output in issuing its figures on the August demand, while the Bureau of Mines was not.

As compared with the 65,000 barrels

United States Production

(Based on American Petroleum Institute estimates, which do not include oil which may have been surreptitiously produced.)

MONTH	Daily Average (Barrels)	Federal Estimate of Demand
August, 1933	2,748,100	.....
September	2,568,250	2,413,700
October	2,392,900	2,338,500
November	2,267,243	2,338,500
December	2,266,426	2,210,000
January, 1934	2,233,505	2,183,000
February	2,239,070	2,183,000
March	2,339,950	2,282,800
April	2,420,950	2,366,200
May	2,575,380	2,366,200
June	2,588,100	2,528,300
July	2,560,550	2,530,300
August	2,475,300	2,449,300
September	2,431,950	2,341,700
October	2,364,150	2,325,800
November	2,375,400	2,340,300
December	2,414,600	[1]2,307,000 / [2]2,460,300
January, 1935	2,500,850	2,460,300
February	2,521,250	2,526,100
March	2,568,800	2,520,300
April	2,559,750	2,527,300
May	2,601,350	2,561,200
June	2,695,100	2,651,000
July	2,707,150	2,660,000
August	[3]2,665,272	2,600,600

[1]December 1-16.
[2]December 17-31.
[3]Preliminary subject to revision.

Monthly Summary of United States Drilling and Production, August, 1935

STATE	*MONTH OF AUGUST, 1935						*CUMULATIVE, JANUARY THROUGH AUGUST, 1935					
	Completions	Oil Wells	Gas Wells	Failures	Initial Prod. Bbls. Daily	Total Bbls. Oil Prod.	Completions	Oil Wells	Gas Wells	Failures	Initial Prod. Bbls. Daily	Total Bbls. Oil Prod.
Oklahoma	172	115	1	56	182,649	15,270,300	1,453	914	71	468	1,919,375	121,373,450
Kansas	106	77	2	27	48,024	4,377,400	834	594	20	220	414,993	35,359,300
Texas	1,001	746	21	234	1,860,588	31,458,550	7,765	5,814	174	1,777	21,572,744	250,379,450
Louisiana	68	35	8	25	18,465	4,417,050	484	237	54	193	111,121	31,109,000
Arkansas	7	2	....	5	850	952,575	96	39	2	55	7,469	7,509,775
Southeastern States	1	....	....	1	.....	.....	12	....	3	9	.....	.....
Eastern States	199	84	62	53	1,394	3,176,350	1,593	494	679	420	10,414	25,529,850
Michigan	63	37	8	18	20,880	1,409,000	305	163	47	95	61,128	9,580,600
Rocky Mountain States	34	25	2	7	8,209	1,690,100	147	113	7	27	41,703	12,369,800
New Mexico	27	22	1	4	36,928	1,655,300	190	142	6	42	398,206	12,210,100
California	79	67	5	7	37,603	18,216,800	703	489	26	188	501,386	110,154,247
Totals	1,757	1,210	110	437	2,215,590	82,623,425	13,582	8,999	1,089	3,494	25,038,539	615,575,572

*Figures for August represent not the calendar month, but the four weeks, or 28 days, ending August 26.

United States Drilling and Production in First Eight Months of 1935, Compared with Similar Period in 1934

STATE OR DISTRICT	WELLS COMPLETED			BBLS. OF CRUDE PRODUCTION		
	In 1935 (8 Mos.)	In 1934 (8 Mos.)	% Change	In 1935 (8 Months)	In 1934 (8 Months)	% Change
Oklahoma	1,453	1,315	+ 10	121,373,450	120,422,500	+ 8
Kansas	834	609	+ 37	35,359,300	30,344,050	+17
Texas	7,765	6,620	+ 17	250,379,450	239,419,800	+ 5
Louisiana	484	509	— 5	31,109,000	19,983,400	+ 8
Arkansas	96	51	+ 88	7,509,775	7,605,500	—12
Southeastern States	12	27	— 56	.....	.....	...
Eastern States	1,593	1,394	+ 14	25,529,850	24,013,050	+ 6
Michigan	305	324	— 6	9,580,600	7,018,350	+36
Rocky Mountain States	147	145	+ 1	12,369,800	10,526,050	+17
New Mexico	190	61	+211	12,210,100	10,938,150	+12
California	703	335	+110	110,154,247	118,108,950	— 7
Totals	13,582	11,390	+ 19	615,575,572	588,379,800	+ 5

per day excess of production over the P. A. B. demand figure for August, there had been an excess of only about 42,000 barrels per day during July and of 44,000 barrels per day in June.

Drilling Comparatively High

Oil field drilling activity was near the peak level of the year in August, averaging 62.8 completions per day, compared with 60.9 daily in July, 58.6 daily in June and 63.6 daily in May. The May figure is the highest on record since July, 1930, when completions averaged 76.6 daily.

For the four weeks, or 28 days, ending August 26, United States completions totaled 1757, including 1210 oil wells with a combined initial production of 2,215,590 barrels daily, 110 gas wells, and 437 dry holes. This brought the total well completions in the United States for 1935 up to 15,582. In the corresponding eight-months period of 1934, there had been 11,390 completions.

Motor Fuel Stocks

(American Petroleum Institute figures, as shown in weekly reports)

DATE	Motor Fuel Stocks, Bbls.
September 9, 1933	50,913,000
September 30	50,457,000
October 28	52,727,000
November 25	51,934,000
December 30	51,580,000
January 27, 1934	50,229,000
February 24	55,976,000
March 24	57,879,000

After March 24, 1934, figures shown represent stocks of finished gasoline, to be marketed as motor fuel, including natural gasoline which has been blended, and gasoline made from refinery still gases.

March 24	57,011,000
March 31	57,098,000
April 28	56,011,000
May 26	54,493,000
June 30	51,405,000
July 28	48,597,000
August 25	46,120,000
September 29	43,850,000
October 27	41,993,000
November 17	*39,892,000
December 1	40,831,000
December 29	43,969,000
January 26, 1935	47,888,000
February 23	54,399,000
March 2	55,654,000
March 30	56,388,000
April 27	55,097,000
June 1	53,180,000
June 29	50,007,000
July 27	48,157,000
August 24	44,751,000

*Low point of year.

Wells Completed in the United States

(Including oil wells, gas wells, and dry holes)

MONTH	Daily Average
January, 1933	30.0
February	30.6
March	26.6
April	25.5
May	25.6
June	21.1
July	23.1
August	30.7
September	36.5
October	40.9
November	46.9
December	47.7
January, 1934	39.7
February	38.1
March	40.6
April	44.0
May	50.7
June	51.5
July	53.6
August	51.3
September	43.2
October	49.6
November	49.9
December	48.3
January, 1935	47.9
February	49.6
March	48.8
April	58.5
May	*63.6
June	58.6
July	60.9
August	62.8

*Highest since July, 1930, when completions averaged 76.6 daily. Average dropped in August, 1930, to 52.4 and remained below that figure until July, 1934.

Therefore, field development during this year has run 19 percent ahead of that last year. If this same percentage of increase continues to be maintained during the closing months of the year, 1935 will furnish approximately 21,000 completions. Such a number may be considered quite normal, being not far under, or around, the average for the pre-depression years of the 1920's.

During 1935 the most noteworthy increase in drilling among the various states was that reported for New Mexico, which has had so far this year 190 completions, or more than three times as many as in the corresponding period of last year. California ranks second with 703 completions, or more than twice as many new wells this year; while Arkansas is third with 96 completions, or almost as great an increase. Kansas, with 834 new wells, showed a 37 percent gain over the first eight months of 1934. Texas' 7765 completions so far this year are 17 percent above those up to this time last year. The Eastern States, with 1593 completions, showed a 14 percent gain. Oklahoma's 1453 completions represented a 10 percent increase. The Rocky Mountain States showed practically no change, having furnished 147 completions this year, as against 145 last year.

Less drilling in 1934 than in 1935 has occurred only in a few areas. The Southeastern States show the most pronounced decrease, having had but 12 completions this year, compared with 27 in last year's first eight months, a decline of 56 percent. Michigan has had 305 completions compared with 324, a six percent decline. Louisiana's 484 completions this year have been five percent less than in the first eight months of last year.

PAY YOUNT TAX

BEAUMONT.

THE Jefferson County tax assessor-collecter September 3 received a check for $557,694.55 in payment of state inheritance taxes against the estate of the late M. F. Yount, of Beaumont, who was head of Yount-Lee Oil Company when he died two years ago. The tax was paid, it is understood with part of the proceeds from the recent sale of Yount-Lee Oil Company stock by Mrs. Pansy Yount, widow of Yount. The Yount-Lee stock of Beaumont and Houston families was sold to a Houston attorney, who then sold most of the company's oil properties to Stanolind Oil & Gas Company.

Crude Oil Stocks

Bureau of Mines figures as compiled monthly, comprising all crude in storage in the country.

At End of:	Total Bbls. In Storage
August, 1933	360,001,000
September	359,979,000
October	356,885,000
November	355,614,000
December	355,394,000
	*354,305,000
January, 1934	353,642,000
February	531,641,000
March	354,067,000
April	354,350,000
May	355,883,000
June	357,239,000
July	355,260,000
August	350,838,000
September	348,937,000
October	346,415,000
November	341,165,000
December	337,254,000
January, 1935	338,174,000
February	337,319,000
March	339,139,000
April	339,793,000
May	338,559,000
June	334,757,000

*On revised basis, 1,089,000 barrels having been transferred from crude to fuel oil in California.

Trend of stocks situation since end of May, figures being from weekly reports to Federal government, embracing 98 percent of total stocks, excluding those of producers.

June 29	320,116,000
July 27	314,335,000
August 17	311,515,000

Hope in California

ATTEMPT BEING MADE TO GET AGREEMENT SIGNATURES

LOS ANGELES.

As a result of a meeting of leading oil producers of California held in Los Angeles Thursday, September 5, including representatives of all independent associations, a decision was reached to make every effort to sign up producers to an agreement to adhere to allotments and to hold another meeting September 10.

Producers of slightly better than 80 percent of the state's production had signed. Sentiment was extremely strong in favor of placing the agreement into effect.

Two major companies made strong denials to reported plans of opening their own wells, in lieu of continuing to purchase.

It was felt that the agreement would be signed within 10 days.

Efforts to readjust retail gasoline prices would be the next step, with good chances of success.

It was hoped that producers of at least 95 percent of California production would sign an agreement to adhere strictly to allotments fixed under voluntary action, which would assure restoration of former crude prices.

Earlier in the week a movement was started to completely shut in several Los Angeles Basin fields, but it failed in favor of signing of the proposed agreement. Daily meetings were then being held, and the prediction was being made that the general situation would be stabilized by October 1.

Stabilization of retail gasoline prices can be expected to immediately follow reduction of the state's production to the allowable.

In greater Los Angeles, many independent brands of gasoline late last week were selling at nine to 11 cents, tax included. There has been practically no change in tank wagon or fuel oil prices.

The recent California crude price reduction appeared to be the harbinger of another gasoline war of the type which has been so satisfactory to motorists in California but a pain in the neck to the stockholders in the warring companies. The ink had hardly been dry on the official notices of the price reduction on crude oil, when moves were under way to reduce the price of gasoline. On the same day it was reported that gasoline had been moved to downtown Los Angeles stations at 6⅞ cents per gallon, delivered, with four cents tax paid. That meant that the refiner was getting about two cents per gallon at his nearby refinery. The delivery in question was made by an independent refiner, and goes to show that no matter how cheaply a major oil company can buy his crude oil, an independent refiner can still force him to sell his gasoline at a loss.

The official statement of Standard Oil Company of California placed the blame for the price cut squarely on the shoulders of the over-producer, intimated that it had been suffering with a weariness in trying to persuade the over-producer to curtail, and emphasized the folly of increasing production far beyond demand at the beginning of the slack season.

Heavy Oils Cut Slightly

The reason given, unofficially by major oil company executives, as to the failure to cut heavy crude as drastically as light oil, was that the fuel oil market is fairly well stabilized. Fuel oil prices range from 55 to 65 cents in tank cars at independent refinery loading racks while the majors are refusing to sell at less than 85 cents in bulk for export. The newly quoted price on 14 to 15 gravity oil at Long Beach is 65 cents, the same price as before the cut. High gravity gasoline producing oil, however in the same field, was reduced from $1.09 down to 47 cents per barrel for 30 gravity.

Recent interesting statistics from California indicate a considerable reduction in gasoline in storage in the state and an increase in crude and fuel oil, all of which increase came during the past three months.

New Agreement Promising

The new agreement which is being submitted to operators for signature is expected to go far to cure the overproduction situation in California, if and when adopted. For it makes provisions for production, refining, and marketing restrictions.

(The California legislature, by failing to act on the interstate oil compact while it was in session recently, closed the door for the curative effects of that compact, and the action of the operators in the state must of necessity be voluntary.)

Producers of about 80 percent of the oil of the state had signed the agreement late last week, and it seemed likely that the price cut would cause still others to sign. The sponsors of the plan, however, do not anticipate 100 percent signatures because more than one company in California has its own producing properties, refineries and sales outlets, and the attitude of at least one of these companies is that the rest of the operators can do what they like, and it will follow its own wishes.

If the signatures of 95 percent are secured the new plan will become operative, excepting in such places where the non-signing companies make it necessary for the signers to protect their properties against drainage.

Some think that the price cut will not remain in effect long, because it will bring in the necessary signatures. Others say that it won't stay in effect long because the demoralized gasoline market will force a crude price increase, and still others look down their noses and say nothing, which probably is the wisest prognostication under the circumstances.

Less Oil in Storage

The recent cutting of California crude oil prices has drawn attention to storage figures for the state. It is noted that during the period from De-

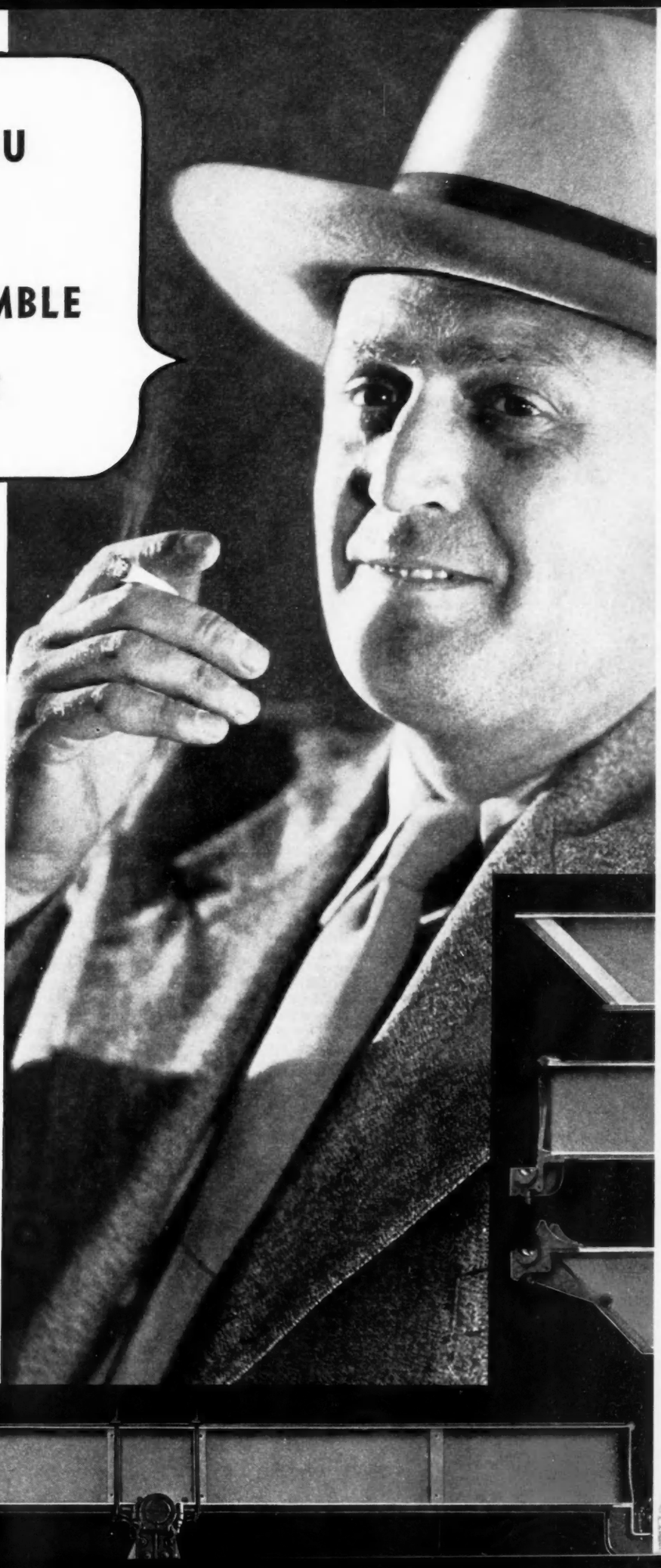
NEXT WEEK

The once great Oklahoma City Field

. . . where initial formation pressures ranged from 1500 pounds to more than 2000 pounds, now has only 94 wells flowing naturally, the remaining 875 wells being on some type of artificial lift, shut down or reconditioning. Oklahoma City represents the first concentrated attempt to artificially produce oil from deep horizons in the Mid-Continent. The producing formations are 6100 to more than 6500 feet in depth.

Because of the importance of future deep lifting methods, and the great amount of this type of work taking place at Oklahoma City, a special article will be presented next week that will thoroughly discuss the problem and describe the operations as they are being applied at Oklahoma City. The article was prepared after a great deal of study, and represents an important contribution to deep well lifting technique, and in addition discusses existing conditions in this once great market factor pool.

I'LL MATCH YOU FOR TEN— BUT I WON'T GAMBLE ON *Beams*



The service record of Moore Walking Beams—*the percentage of beam failure experienced is practically negligible*—indicates the certainty with which you may depend upon Moore beam performance. There is no mystery or secret involved; simply Moore's unremitting attention to proper design, sound steel, careful fabrication and rigid inspection.

Moore Walking Beams are furnished in five weights, and in lengths from 23' to 27' working centers. Important among the several styles available is a dual service beam suitable for all kinds of drilling and pumping. It is shown below in pumping position. For drilling, it is reversed and equipped with a temper screw adapter and temper screw bearings.

Write for the Moore Walking Beam bulletin.

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Moore

DERRICKS · PUMPING EQUIPMENT

cember 31, 1929, to July 31, 1935, total stocks of all products have been reduced slightly more than 66,000,000 barrels.

The growing demand for all grades of fuel oils caused a reduction of better than 48,000,000 barrels in stocks of heavy crude and all grades of fuel oils during the period mentioned. In California, heavy crude oil is bunched with fuel oils for statistical purposes.

During the same period, stocks of refinable, or gasoline bearing crudes, were reduced only 8,900,000 barrels, while storage of gasoline was off 7,743,163 barrels to a low of 8,787,430 barrels at the close of July. There was little change in other storage although natural gasoline showed a large increase in the 6½ year period.

Major purchasing companies let it be known they did not want to see large stocks again in the state, and as production of crude was climbing fast, they felt their only recourse was to reduce the price.

Stocks of heavy crude and fuel oils had shown an almost continuous decrease for several years, hence the new posted price had little effect on producers of heavy oil. In fact in many instances the price was not changed, and where changed were made, the difference was slight.

Heavy crudes and fuel oils can be stored in open storage, or concrete reservoirs, but light products must be stored in steel tanks.

This explains the heavy cuts in the posted price for light crudes. Producers of this grade of crudes, especially in the Los Angeles Basin, and in some of the new fields where light crude was developed at great depths, in many instances, were showing no disposition to reduce production to a point necessary to equal demand.

300-Mile Gas Line

TO PROVIDE DETROIT WITH TEXAS PANHANDLE FUEL

DETROIT, MICH.

UNDER terms of a contract consummated in Detroit August 30, it is contemplated that construction will be started about January 1, 1936, on a natural gas pipe line project, designed to deliver Texas Panhandle gas to Detroit.

Detroit City Gas Company, which currently supplies manufactured gas to Detroit consumers, will distribute the Texas gas. Under the August 30 contract this company will be supplied with gas by Panhandle Eastern Pipe Line Company, which is to undertake the pipe line construction in that connection.

Panhandle Eastern, it is understood, plans to build 300 miles of 24-inch pipe line from its existing system at Rockville, Indiana, to Detroit, at an estimated cost of $9,000,000. That company also contemplates spending $9,000,000 for improving the present system from Rockville to the gas fields in the Southwest, it is said.

Panhandle Eastern Pipe Line Company is 50 percent owned by Columbia Oil & Gasoline Corporation, which in turn, is affiliated with Columbia Gas & Electric Corporation.

Under this contract, Panhandle Eastern is to supply gas to the Detroit company for 15 years, beginning July 1, 1936.

In carrying out its part of the project, Detroit City Gas Company is said to contemplate spending $2,500,000 in changing its existing distribution facilities to handle natural gas instead of manufactured gas.

The natural gas is expected to afford substantial savings to Detroit consumers, particularly for the industrial users.

This contract is expected to shelve any immediate possibility of the proposed municipal ownership of gas distribution in Detroit; while it will also possibly tend to discourage the proposal of a Panhandle-Detroit natural gas line to be financed by the state of Texas with aid of federal funds.

Detroit's Mayor Frank Couzens and the city administration had been contemplating plans under which the city would have issued bonds for building a municipal gas distribution system and under which the city would have contracted with the Panhandle-Eastern company for purchase of natural gas. The city officials proposed to seek approval of such plans by the voters at the October 8 primary. However, there was possibility the bond issue would have been defeated, since Detroit City Gas Company had given service that resulted, apparently, in but slight demand for public ownership of gas distributing facilities. Associates of the mayor, who was out of the city, expressed satisfaction over the Detroit City-Panhandle Eastern contract.

After William G. Woolfork, president of Detroit City Gas Company, had announced the signing of the contract with Panhandle-Eastern, there arose immediately a storm of protest from Michigan gas interests. The latter expressed fear the program would badly cripple gas development in Michigan. Detroit, Michigan's largest city, has an estimated market of 50 to 80 million cubic feet of gas daily for domestic use, with a possibility of upwards of 200 million feet with industries.

Following announcement of the contract, there came a report from Mount Pleasant, Michigan, stating Isaiah Leebove, head of Mammoth Petroleum Company, which recently completed a large oil well near there, had criticized the plan to bring Texas gas into the state. He insisted there is enough natural gas in Michigan to supply not only Detroit but also other Michigan cities. He was quoted as saying that he was prepared to finance up to $15,000,000 a gas pipe line from Michigan fields to Detroit, and that he would put up $25,000 immediately as guarantee of good faith.

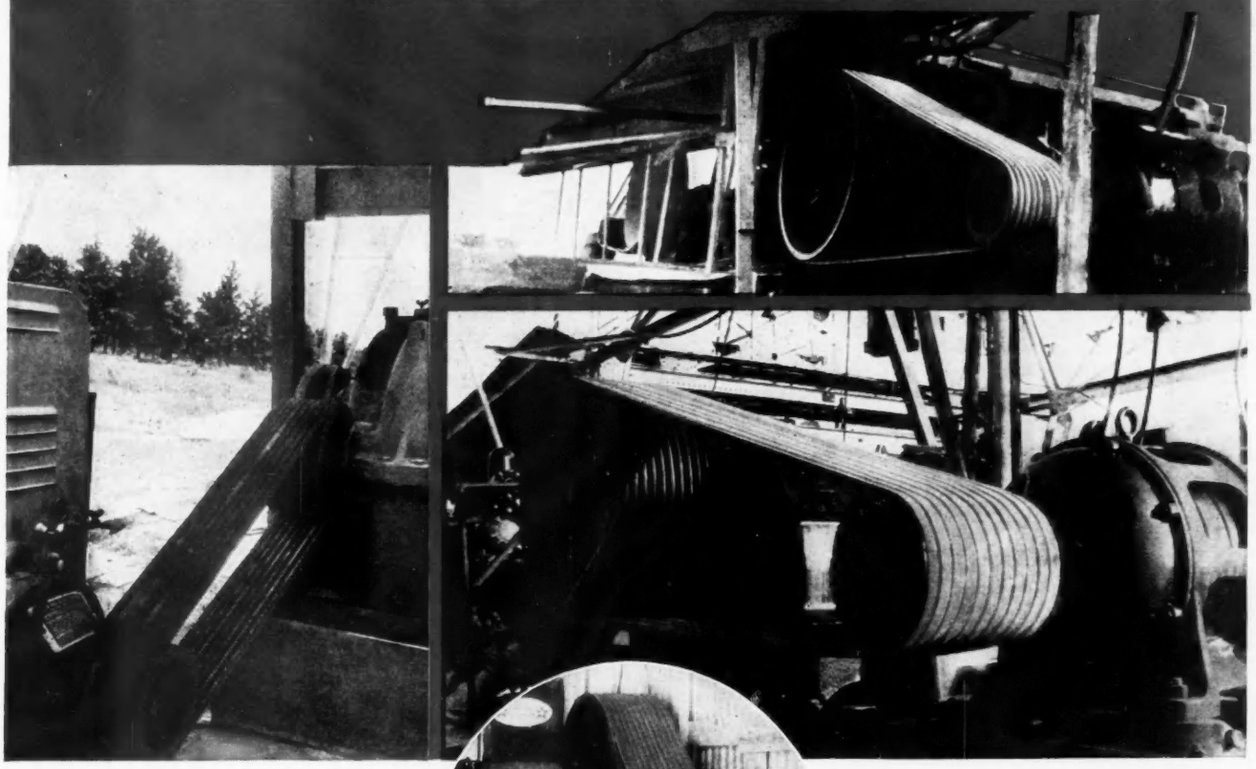
Meanwhile, no further progress has

[*Continued on page 58*]

Here are two well known South American oil executives spending part of their vacation in the States in an attempt to take the world's championship in the Star boat class back to Maracaibo. The skipper, Chester Crebbs, general manager of the Venezuelan Gulf Oil Company, Maracaibo, is shown in rear at the stick with his crew, Frank C. Laurie, general manager of Lago Petroleum Corporation, at the front. The picture was snapped by E. L. Decker on the second day of the races off Newport, California. Considering the difference between sailing conditions on Lake Maracaibo and the coastal waters of California, Crebbs and Laurie made a good showing. The world's title, a much sought after honor in the sailing sportsman's world, was won by Hook Beardsley of Newport, winner of the 1935 classic.

DAYTON COG-BELT DRIVES

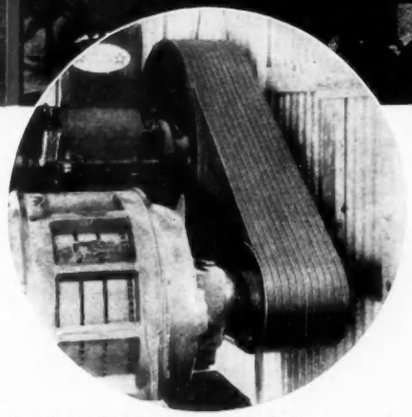
MAKE GOOD IN TOUGH SPOTS AND TIGHT PLACES



● In the oil industry where belts have to perform in tough spots and tight places, thousands of Dayton Cog-Belt Drives are giving unrivaled service.

Because of their ruggedness, durability, resistance to weather conditions, and their long life without maintenance expense, Dayton Cog-Belt Drives are especially adapted for pumping units, mud pumps, central powers, compressors, and also all classes of refining machinery. Their ability to work on extremely short centers permits them to be installed under small shelters.

Dayton Cog-Belts have unusual flexibility, strength, and traction. They are



"built-to-bend." They are die-cut—and accurately fit the grooves of all standard pulleys. They need no dressing. Because of being pre-stretched, they require minimum adjustment.

The rigid crosswise construction of Dayton Cog-Belts prevents squashing and distortion, so there is no twisting and weaving. This means smoother running . . . positive speed . . . less tension . . . less wear on bearings. Equipment performs better and lasts longer with minimum maintenance service.

Let us tell you how Dayton Cog-Belt Drives will solve your particular transmission problems.

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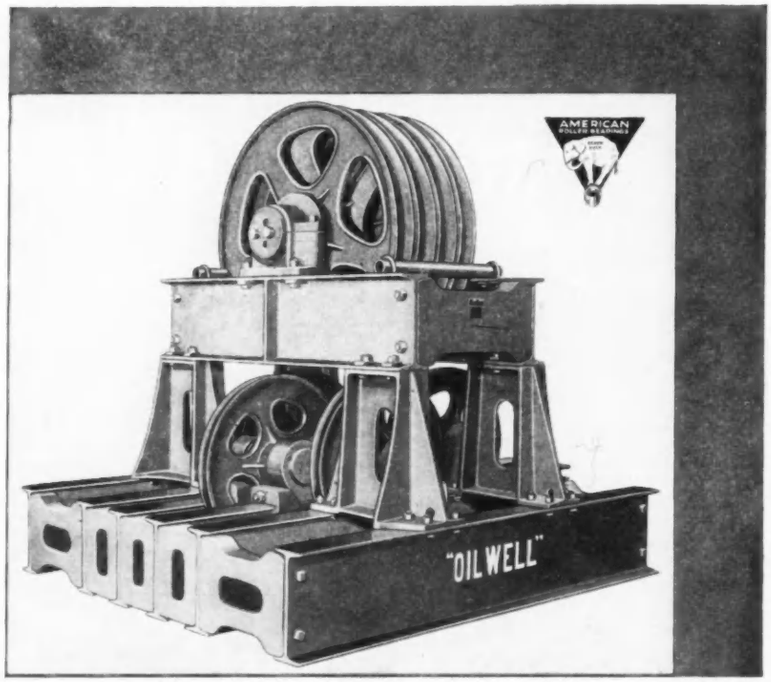
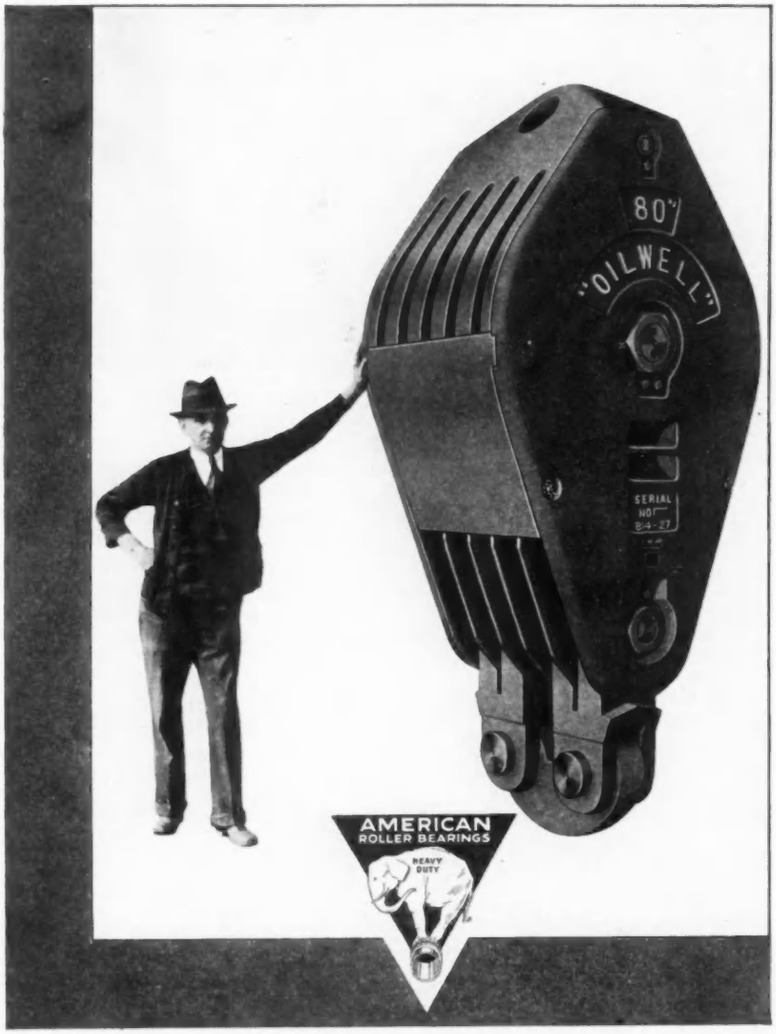
World's Largest Manufacturers of V-Belts
Manufacturers also of Dayton Fan Belts, Dayton Red Tube Radiator Hose and the famous Dayton Thorobred Tires and Tubes

Dayton
COG-BELT DRIVES

A Matched Team *for* HEAVY DUTY



"Oilwell's" newest 80" Traveling Block is streamlined, has manganese sheaves and a working capacity capable of taking care of the deepest drilling. It weighs 10,080 lbs.



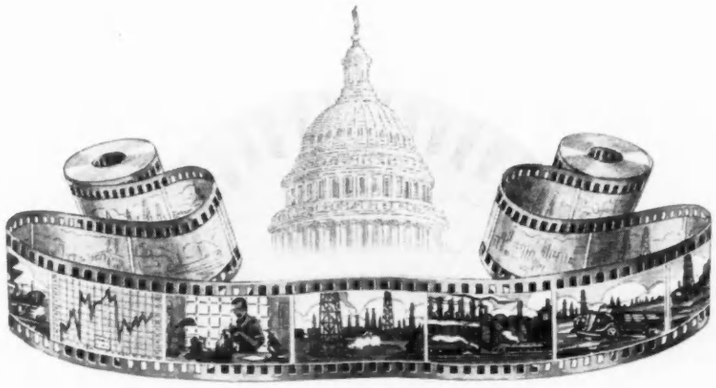
"Oilwell's" new Heavy Duty Double Deck Crown Block weighs 8690 lbs. and is built to team up with the 80" Traveling Block.

The sheaves on both of "Oilwell's" fine new team of blocks operate on American Super Heavy Duty Roller Bearings. A better bearing for this service hasn't been built.

AMERICAN SUPER HEAVY DUTY ROLLER BEARINGS

AMERICAN ROLLER BEARING COMPANY, PITTSBURGH, PA.

The Changing Panorama



THE OIL WEEKLY'S COMPOSITE VIEW OF INDUSTRY

Edited by JACK LOGAN, Associate Editor

THE records for the first eight months of 1935 give evidence that operations of the oil industry are back around levels that were normal in the pre-depression years.

Oil Industry Recovering

In response to consumption near all-time peak levels, crude oil production is running substantially ahead of last year. Yet wells and refineries are being operated in close conformity with market requirements, resulting in comparatively favorable prices—except currently in California.

Consequently, there has been strong incentive for drilling wells, and well completions this year are running 19 percent ahead of last year. If a similar rate of increase continues to the end of the year, 1935 will witness completion of about 21,000 wells, or about as many as the annual average for several years before the depression.

In California, oil company earnings are being circumscribed currently by the depressed prices of crude oil and gasoline. But markets east of California are holding fairly steady, at levels which are near the highest for five years. For numerous companies, 1935 earnings, similarly, have been running highest for five years. And there are grounds for hope that, in general, the year as a whole will be the best since 1930.

National Markets Not Disturbed

As the past week drew near the end, determined efforts were being made in California to get signatures pledging 95 percent of the state's production to a voluntary proration program that would assure restoration of former crude oil prices. It is expected that successful crude production control would bring immediate improvement of the gasoline prices, which weakened further last week, reductions spreading throughout the state. The hope was entertained that the general situation would be stabilized by October 1.

Despite the low prices on crude and gasoline in California, the national oil market picture continued comparatively favorable last week, although not as satisfactory as in the previous week.

In the East there was further evidence of weakening of retail gasoline postings, with price-cutting on third-grade material widespread, although major companies were generally adhering to old postings.

In the Mid-Continent, gasoline tank car prices exhibited some weakness, with third-grade, or low-octane, material one eighth cent per gallon lower than in the previous week. Kerosene, likewise, was down one eighth cent. However, the prices of higher octane gasolines continued unchanged.

Meanwhile, continued increase of hot oil output in East Texas represented a disturbing factor, the daily average having risen above 50,000 barrels.

Nevertheless, the Mid-Continent conditions were comparatively favorable, with crude production control effective except in East Texas, while the Connally Act was largely preventing Texas hot oil from encroaching on markets outside the state.

Suspicions Divide Industry

The oil industry is getting back toward normal not only with respect to volume of business, prices, earnings, and drilling; but also with respect to another matter that is not so pleasant. In recent weeks there has been a pronounced reverting to old-time suspicions and rancor, as between different elements and groups within the industry.

Small companies are charging that majors are contemplating, and even executing, monopolistic schemes. Large companies are criticising some of the smaller ones as being chiselers, in connection with the industry's efforts to restrain operations within economic limits. Political figures are taking advantage of the rift to further their own designs, broadcasting the gossip, even at the expense of aggravating the suspicion and ill-feeling that already exist.

The coals of suspicion were fanned into a flame by the California crude price cut. The Independent Petroleum Association of California wired the Depart-

ment of Justice at Washington, protesting the price cut, and requesting an investigation as to whether or not anti-trust laws were being violated.

The flame that was generated in California has been fed by talk that the large companies plan to bring about deliberately a reduction of gasoline prices in the Mid-Continent, which in turn would be an excuse for cutting crude prices, in order to fill up extensive empty storage with cheap oil.

That particular charge was given wide publicity recently by the chairman of the Texas Railroad Commission, who professed belief in its authenticity. Big-company officials who would comment on the matter denied the allegation, and counter-charged that the commission chairman was playing politics. They asserted that big companies are naturally as anxious as small concerns to see good gasoline prices, since the prices received at the filling stations largely determine the earning possibilities of integrated companies.

Meanwhile, the National Oil Marketers Association, through its headquarters at Washington, has urged its members throughout the country to cooperate with the Department of Justice in an investigation which the department is conducting at request of the association. That probe was intended to determine whether or not the anti-trust laws are being violated by refiners and major oil companies. It was requested in the fear that monopoly-fostering oil legislation might be enacted—in the past session of Congress, or the session next January.

Ethiopian Deal Abandoned

The Ethiopian oil concession appeared to be virtually a closed incident last week, when the Socony-Vacuum and Standard of New Jersey interests, through the department of state, indicated intention of withdrawing from the deal.

The matter was not particularly important from an economic standpoint. The American interests had no definite assurance that Ethiopia has oil deposits that could be operated profitably. It was a wildcatting proposition—in a comparatively inaccessible region; not a case of acquiring proved oil deposits.

From a political standpoint, however, the Ethiopian concession was dynamite.

And following the original shock, there will quite possibly be some long-felt secondary reverberations.

Possible Effects.—It is to be expected, for instance, that there will be considerable clamor, both in governmental and political circles, and among the public, demanding government supervision over foreign business activities of American corporations, lest the companies inadvertantly involve the nation in grave entanglements. The popularity of the recent neutrality legislation demonstrates the strong public sentiment against international disputes or war.

It is to be expected, moreover, that the Ethiopian affair will impress upon the United States the extreme importance of oil reserves—and the need for conserving the nation's supplies. In future warfare, oil will be as vitally important as the airplanes, ships, trucks, tractors, tanks, and automobiles that are built to burn oil. World's leader in oil production, the United States heretofore has not been inclined to worry seriously over oil for national defense—as have numerous outstanding foreign countries.

But lately there have come assertions from some experts indicating the nation quite possibly may be up against a definite shortage of oil within five to eight years. The prediction is based on the increasing difficulty of finding new fields, and the heavy inroads being made into established reserves.

And so the Ethiopian matter may quite likely lead to a keener interest of the public and the national government in United States oil reserves—an interest which may mean, eventually, a more active role of the federal government in conserving the oil supplies. Necessarily, this would involve stricter federal regulation of the petroleum industry than there has been in the past. With the oil code gone, the federal government's only remaining vestige of control of the nation's oil is that exercised through the Connally Act. And that law only serves as a back-stop for the regulation of the state government.

American Oil Abroad.—Incidentally, even under the oil code, the federal regulation actually did nothing toward safeguarding the country's position with respect to oil for national defense—as it was supposed to do. Instead of strengthening the country's position, in fact, the oil code did exactly the opposite. It prohibited the importation of oils above about 100,000 barrels daily. In effect, it encouraged the exportation of oil to foreign lands.

In that connection, while the United States for over five years has been withdrawing large quantities of oil from storage, it has been doing so only because it has been exporting much more oil than it has been importing. Moreover, the exported oil has not been consumed. Along with substantial "excess" production from fields outside the United States, the American exports have gone into storage in foreign countries. In other words, while the United States has been cutting down its stocks, it has been contribuing greatly to the situation in which other countries have been increasing theirs. (See The Oil Weekly, February 25, 1935, pages 10, 43, 44.) While the United States was bent upon lowering its oil inventories, in the interest of higher oil prices, the other countries were willing to pay the prices needed to bring American oil to them. Considering that some of the world's leading countries have anxieties over their oil supplies, it is but reasonable to presume that some of the American exports served the end of helping to allay such activities.

Changes Likely.—At any rate, there are quite likely to be some new arguments offered when Congress next January takes up again the question of stricter federal regulation of petroleum. There will likely be more emphasis on the national defense idea. And perhaps there won't be such strong insistence as formerly on barring or penalizing imports.

MEN IN THE INDUSTRY'S NEWS

W. L. CONNELLY, chairman of the board of Sinclair Prairie Oil Company, was in Casper the past week inspecting company operations of the subsidiary, Sinclair-Wyoming Oil Company. He was joined here by his son and daughter-in-law, Mr. and Mrs. Harry Connelly of McPherson, Kansas, where Harry Connelly is superintendent of Sinclair Prairie Oil Company operations.

JOHN ROWE, general purchasing agent for Humble Oil & Refining Company, has returned to Houston after spending a two weeks vacation near Kerrville, Texas.

D. V. CARTER, chief petroleum engineer for Magnolia Petroleum Company, Dallas, departed last week accompanied by members of his family on a vacation visit to Indianapolis and other points in the Middlewest.

W. S. JOHNSTON, with Warner Quinlan Company of Texas, has been transferred to Corpus Christi from West Texas, to be in charge of the company's drilling operations in the Saxet field. D. A. Deckerman, vice president of the same company, Houston, is in Corpus Christi to supervise the drilling of the company's first well in a campaign just launched in the Saxet field.

J. A. MOFFETT, who recently resigned as Federal Housing Administrator, has resumed his position as vice president of Standard Oil Company of California and will make his headquarters in New York City.

DR. W. B. EMERY, western geologist for Ohio Oil Company, with headquarters in Casper, is in Washington, D. C., on company business.

J. ELMER THOMAS, consulting geologist and independent operator of San Antonio, is spending several weeks in Fort Worth.

R. A. LIDDLE, chief geologist for the Pure Oil Company in the Texas producing division, with headquarters at Fort Worth, resigned effective September 1. He had been with the company more than 10 years. F. A. Poulsen, member of the company's Fort Worth geological staff, was promoted to fill this vacancy.

S. S. ROBERTS, for many years with Transcontinental Oil Company in Tampico, Mexico, and a recent petroleum engineering graduate of the University of Southern California, has been made chief statistician of Carter Oil Company, succeeding Tom Brownfield, who was recently promoted to the position of chief scout.

G. E. ROBINSON, chief scout for Pure Oil Company, Houston, and an enthusiastic fisherman, is spending his vacation fishing along the Gulf of Mexico.

J. O. HARDY, production superintendent of the Shell Petroleum Corporation, Luling, has been transferred to Corpus Christi to take charge of the new production office opened there. Wesley Davis, division engineer and L. J. Lamberson, chief clerk, have been transferred from Louisiana to this office. The company's office will be at 801 Nixon building. At this time, Shell Petroleum Corporation has two active wells in the Saxet field and has considerable acreage within the virtually proved territory.

GEORGE EDWIN DORSEY, chief geologist for Socony-Vacuum Oil Company, Inc., has recovered sufficiently from injuries sustained earlier this year in a fall at his New York residence to resume his duties on a part time basis. His condition was critical for several weeks after the mishap.

M. L. FREESE, vice president of Bell Oil & Gas Company of Tulsa, has been elected vice president of Solvex Refineries, Inc., of Gladewater, Texas. I. Arthur Anson, also vice president of Bell Oil & Gas Company, has been made

M. L. FREESE

secretary and treasurer of Solvex Refineries, Inc. Both men will continue as officers of Bell Oil & Gas Company. A number of improvements, including a cracking unit, are being installed at the Solvex plant.

SIM O'NEAL, deputy supervisor for the oil and gas division of the Texas Railroad Commission, has been transferred from Houston to San Angelo, where he is to have charge of proration and conservation enforcement in 15 West Texas counties. He succeeds V. E. Cottingham, who was promoted several months ago to chief petroleum engineer.

FREDERICK G. CLAPP, having spent part of the spring and summer in professional activities in the West Indies and subsequently three weeks vacationing with his family at Duxbury, Massachusetts, spent a week in August on a walking trip. He was accompanied by his brother. They walked over a part of the Long Trail in the Green Mountains of Vermont. Mr. Clapp returned to his New York and Bronxville offices on August 27.

F. B. DURY, head of the land department for Pure Oil Company in the Texas producing division, with headquarters at Fort Worth, has resigned. He will be succeeded by M. H. Plummer, former assistant.

WALTER W. FLEMING, president, Marathon Oil Company, Tulsa, has returned from a visit to the general offices of The Ohio Oil Company at Findlay, Ohio.

BAIRD H. MARKHAM, director of the American Petroleum Industries Committee, New York, will be a speaker at the annual meeting of the North American Gasoline Tax Conference, which is to be held at Hot Springs, Arkansas, September 18, 19 and 20. The conference is composed of state gasoline tax officials, and functions as a clearing house for effective means and methods of collecting state gasoline taxes, preventing evasion, and enforcing tax laws.

H. S. McCLINTOCK, chief scout and assistant to the head of the land department of Phillips Petroleum Company, is homa, recently is reported resting easily in an Ada, Oklahoma, hospital.

JAMES DONNELL of Findlay, Ohio, vice president of Mountain Fuel Supply Company, and son of Otto D. Donnell, president of Ohio Oil Company, is making an inspection of company properties in the Rocky Mountain States.

C. L. MOODY, The Ohio Oil Company, Shreveport, Louisiana, has announced that the Shreveport Geological Society plans a field trip to be held on October 4, 5, and 6 in which a general view of the Oklahoma Ouachita Mountains may be obtained under the guidance of Hugh D. Miser of the U. S. Geological Survey. The trip is open to all interested parties, and there are no fees. Mr. Moody asks those planning to attend to communicate with him.

TOM ANGLIN, for several terms a member of the Oklahoma Senate and a well known oil attorney, was appointed during the week as Oklahoma's representative on the oil state's compact committee. Anglin was a candidate in the democratic primary for governor of Oklahoma in which Governor E. W. Marland was the successful candidate. His appointment to the post by Governor Marland came as a surprise to many state leaders. Since retiring from politics Anglin has repre-

sented several major oil companies and has appeared before the corporation commission on a number of occasions in regard to proration matters. His home is in Holdenville.

WALLACE LEE, geologist in the land and leasing division of the United States Geological Survey, has been recently transferred from Okmulgee, Oklahoma, to Wichita, Kansas, from which point he will conduct a special survey.

HEATH M. ROBINSON, consulting geologist, has returned to headquarters at Dallas from a vacation visit to his former home in West Virginia.

J. A. MacKINNON, formerly with Globe Refining Company, at McPherson, Kansas, and Sparco Refining Company, at Shreveport, has joined Solvex Refineries, Inc., of Gladewater. He is general superintendent of the latter, and at present is busy remodeling the old Culver Oil Company refinery, which has been purchased by Solvex Refineries, Inc.

DAN CAMERON, Oklahoma City district scout for Carter Oil Company, made a flying trip, leaving Oklahoma City by plane Saturday, September 7, being married in Los Angeles on the following day and back on the job on Tuesday the 10th.

PHIL ROSENBERG, Winfield Killam and other members of the Laredo oil set are backing a plan to build a polo field and bridle path at the Laredo Country Club.

DAN E. BOONE of Houston, was the speaker at the Houston Geological Society's weekly meeting September 5. He discussed the Kittrell field, Houston County, Texas.

D. B. "DAVE" MALERNEE, prominent independent operator who was severely burned in an oil well at Konawa, Oklahoma, recently is reported resting easily in an Ada, Oklahoma, hospital.

SAM EVANS, Mirando City, and family spent several days in Concord.

R. F. FIKE, superintendent of the motor transport department of Mid-Continent Petroleum Corporation, Tulsa, has returned from an extended vacation spent in the West.

CLAREL B. MAPES, secretary of the Mid-Continent Oil & Gas Association, has returned to headquarters in Tulsa after visiting the Texas and Louisiana divisions at Dallas and Shreveport, as well as other oil centers. Although a definite date has not been set Mapes said the general association meeting will be held in October.

HARRY J. MORLANG, vice president of Oil Well Supply Company of Dallas, was a Tulsa visitor early in the week when a stop was made on a tour of Mid-Continent areas.

J. D. CLAIR SMITH, of Laredo, and family, recently returned from a trip to Monterrey and Saltillo, Mexico.

B. SIKES, Mid-Continent manager for Baroid Sales Company, was the principal speaker before the Ada, Oklahoma, chapter of the American Petroleum Institute on Friday evening, August 30. His topic was, "Mud Problems in the Fitts Pool."

J. L. JOHNSTON of the J. L. Johnston Well Testing Service, Houston, left early in September for a tour to include Trinidad, Panama Canal Zone, Venezuela and Colombia, during which he will make a check of drilling and prospective drilling operations. He is accompanied by his wife, his son Aubrey, and Mrs. Aubrey Johnston. Young Aubrey Johnston is also a member of the J. L. Johnston Well Testing Service.

L. B. JONES, sales engineer for Mosher Steel Company, Houston, is on an extended business trip through the east, including New York, Chicago and other cities. Mr. Jones is expected to return to Houston this week.

COLONEL JOHN H. JOUETT, pioneer U. S. Army airman who returned last week to this country from China where he organized the Central Aviation School at Shienchiao, has joined the aviation department of Standard Oil Company of New Jersey, according to an announcement made by Major E. E. Aldrin, manager of this department. Colonel Jouett was the first foreigner to be honored with the order of Commander of the Flowery Jade. Colonel Jouett, a graduate of West Point and a balloonist as well as an airplane pilot, learned to fly at Brooks and Kelly Fields, Texas. He went to China three years ago through the cooperation of the U. S. Department of Commerce to organize an aviation school at Shienchiao and in three years taught approximately 300 Chinese to fly. During this period he developed the Central Aviation School from one ramshackle hangar and a small, bumpy field into an institution that today is one of the most modern of its kind in the world.

C. V. LEE, president of Taylor-Link Oil Company, San Angelo, has acquired all outstanding stock in the company held by his brother, T. P. Lee, Houston, and others. The company discovered the Pecos County pool bearing its name, and holds producing properties in other areas in West Texas.

DIED:

PATRICK J. OLIVER, purchasing agent for Mexican Gulf Oil Company at Tampico and original organizer of the Purchasing Agents Association of Tampico, died suddenly September 1 from heart attack. Mr. Oliver, a native of West Virginia, was born in Parkersburg. His connection with the Gulf Companies dates back to 1907, when he entered the pipe line department at Beaumont, Texas. Mr. Oliver was transferred to Houston July 1, 1916, the date marking establishment of Gulf headquarters in Houston. Foreign service began August, 1917, Mr. Oliver going to Tampico to become assistant pipe line superintendent for Mexican Gulf Oil Company at Tampico. In May, 1919, he was appointed purchasing agent there, a position which he held at time of death. Mr. Oliver was active in civic affairs in Tampico, a member of the Knights of Columbus, a member of the Colonial Club and of the Purchasing Agents Association of Tampico, of which he was the first president. Funeral services for Patrick J. Oliver were held in Mexico City, September 4. He is survived by Mrs. Oliver, two children, and four brothers.

R. LEE TAYLOE, 66, president of the Lide-Tayloe Oil Company, owner of producing properties in the East Texas field, and one of the pioneer operators in the Homer field, Louisiana, died September 2, at his home in Clarksville, Texas, following a brief illness. Funeral services were held September 3.

A. W. THOMAS, 53, West Texas drilling contractor, died September 4 while confined in a hospital at Midland, Texas, as result of a stroke sustained several weeks previous. He had resided at Midland for a number of years, and was active in civic and social circles.

FRANK ZIMMERMAN, 60, well known oil man of Cleveland, Texas, was drowned on Sunday, September 1. Mr. Zimmerman came to Cleveland 18 years ago from Springfield, Illinois, where he had been a coal miner. He organized Diamond Oil Association, and drilled the first wells in the Cleveland section in 1925. Although he had been drilling almost continuously since, oil was not discovered until two years ago. Zimmerman was born in Austria and came to America in 1901.

DRIVING SAFETY

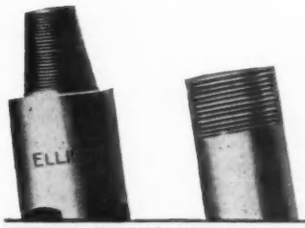
Contest of PMTA highly successful first year

TULSA.

THE Petroleum Motor Transport Association of Oklahoma has established an enviable safety record. After several months of discussion the Association placed the contest in operation on July 1, 1934. Each member company turns in its accident report to Leon Schroeder, secretary, on a prepared form, and from these reports a tabulation was kept on all transportation vehicles operated by members of the Association. The accident frequency of Association members during the first 12 months of the contest was but .9826 per 100,000 miles driven. The remarkableness of this record may be seen by a comparison with the transport accident record of the entire petroleum industry, which was 1.99 per 100,000 miles driven. Furthermore, the transport accident frequency of the petroleum industry is considerably below those of the country. Some of the companies participating established remarkable records. One company had a record of .1972 and others ranged up to 1.390.

While the association has had no definite program for reducing accidents, leaving this up to the individual companies, it has had several safety directors speak before its regular meetings on safety applications to motor vehicles.

The results of the contest have been so satisfactory that it will be continued.



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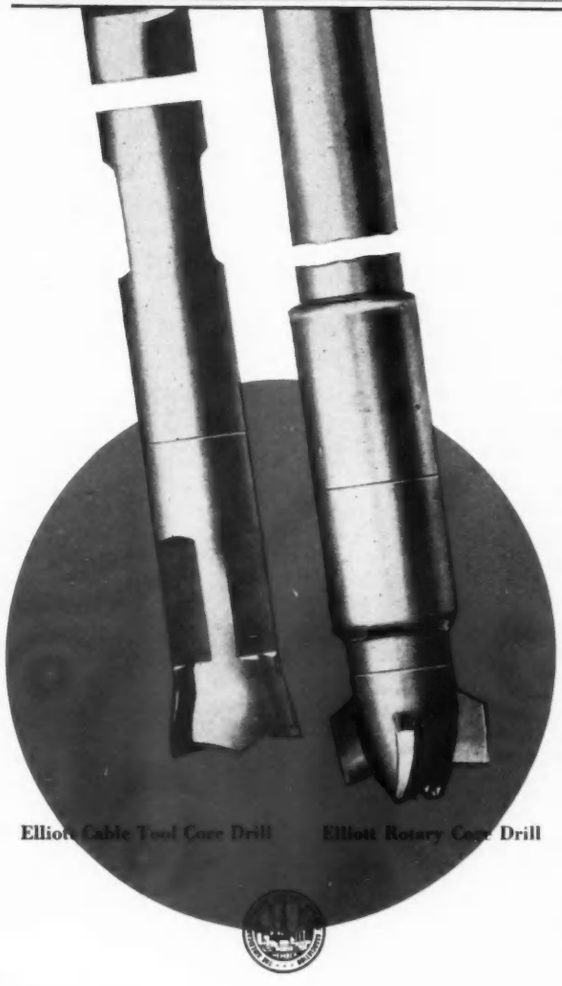

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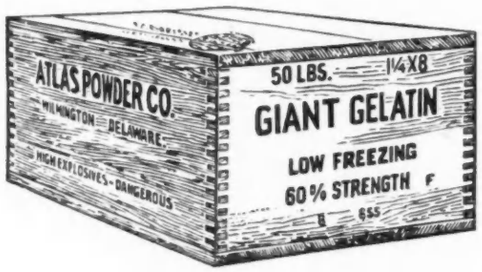

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EXPLOSIVES

ATLAS EXPLOSIVES

1935 vs. The 20's

FEWER RIGS RUNNING NOW, BUT FOOTAGE AND COMPLETIONS COMPARE FAVORABLY

By JACK LOGAN, Associate Editor

IN ANALYZING drilling activity, these circumstances are indicated:

1. During 1935 the industry will likely complete between 20,000 and 21,000 wells, which total will closely approximate the average number of completions per year during the 1920's.

2. While oil well completions have thus gotten back around "normal," the number of drilling rigs in operation is substantially below the average for the 1920's.

In normal times, during the '20's, California had from 500 to 700 drilling rigs in operation, against around 250 today; and the whole United States had between 5000 and 6000 rigs in operation, against an average of 3200 for the first half of this year and approximately 3500 today.

At first thought, the above two statements may appear to contradict each other. For the first indicates that drilling is back to "normal," while the second might be construed to show that drilling activity continues sub-normal.

On further thought, however, it can be seen readily that the two statements do not necessarily conflict. In fact, they tie in nicely with each other, in the light of greater efficiency of drilling rigs today, as compared with 10 or 15 years ago.

Thus the statistics give definite evidence that well completions are back around "normal," despite the fact that rigs running are not. In other words, the industry now is completing a "normal" number of wells with a "sub-normal" number of rigs. This means, simply, that today's rigs are faster and more efficient than those in use in the 1920's.

While these facts and conclusions speak well for today's drilling rigs, there is, moreover, another factor, which further adds to the credit of the present day drilling machinery, equipment, and methods. It is the matter of average drilling depths. While it is indicated that today's rigs are completing more wells per year than yesterday's rigs, the present rigs are drilling not only more but also deeper wells, on the average. Therefore, today's rigs are drilling an especially large amount of footage per year, as compared with yesterday's rigs.

In view of the above considerations, this interesting and significant conclusion appears to be justified:

Considering that operators are steadily reaching for deeper pay formations, it seems probable that the total footage drilled from year to year will increase materially, despite the fact that fewer rigs may be running and also that fewer wells may be completed.

At Anahuac, even in early development, wells are drilled to 7,000 feet in 25 days over-all time.

Recovery For Completions

The statement that 1935 likely will furnish between 20,000 and 21,000 new wells is based on the record so far this year, coupled with estimates for the remainder of the year, by states and districts. In 1934, there were 17,508 completions of wells. For the first seven months of 1935, completions ran 19 percent ahead of 1934. If the same percentage of increase holds during the remainder of the year, the 1935 total would be approximately 21,000 completions.

To show how such a total for this year would be back around the results during the 1920's, the record back through 1923 is here given, as previously published in THE OIL WEEKLY's statistical issue, January 28, 1935:

Year	*Wells Completed in United States
1923	20,513
1924	21,713
1925	25,406
1926	28,995
1927	22,301
1928	19,964
1929	23,463
1930	19,848
1931	11,716
1932	14,290
1933	11,700
1934	17,508
1935 (indicated)	20,000-21,000

*Oil wells, gas wells, and dry holes.

Deeper Drilling

Concerning the trend toward deeper drilling, figures for substantiation are scarcely necessary. Over a dozen wells have been drilled below 10,000 feet, and the holder of the world's record went to 12,786 feet, or nearly 2½ miles. Various fields are producing from below 9000 feet. And a high percentage of recent oil field discoveries have been pools from 6000 to 9000 feet deep. In some districts, particularly on the Texas-Louisiana Gulf Coast, geologists and engineers are talk-

ing nonchalantly about tomorrow's production from depths of 10,000 to 15,000 feet.

Following increases in past years, the average drilling depth for the United States in 1935 will be 2880 feet, it is indicated. In 1934 the average depth of wells drilled in the United States was 2828 feet. That 1934 average is based on weekly reports, showing wells completed and their depths.

In 1934, the Gulf Coast led the country in deep drilling. In the Texas division of the Gulf Coast the wells averaged 4692 feet deep. California ranked second, with an average depth of 4608 feet. The following table shows the average drilling depths in 1934 in the various states and districts:

State or District	Average Depth Per Well (Feet)
Oklahoma	2677
Kansas	2981
Texas	2955
East Texas	3660
North Texas	1228
West Texas	2705
Texas Panhandle	2851
Texas Gulf Coast	4692
South Texas	2734
West Central Texas	1365
Louisiana	3537
Arkansas	2985
Southeastern States	3642
Rocky Mountain States	2620
California	4608
Michigan	2906
Eastern States	1669
United States	2828

Rigs in Operation

Since there were 5000 to 6000 rigs in operation in the normal times of the 1920's, compared with about 3500 rigs now running, it is indicated that many rigs have been forced, meanwhile, into idleness or into the junk heaps. This conclusion is readily substantiated by investigation of facts in the matter. Hundreds of rigs, mostly of inferior quality or design, are still stacked. This statement can be confirmed by a check-up with only a few oil companies and drilling contractors in any district. Many, or perhaps most of these will remain stacked, in large part at least, due to the fact that newer or better equipment has been developed in recent years, and that many of these old "coffee mills" of ancient design will never operate again. It is probably a fairly accurate guess that there are still at least 1500 rigs of various kinds lying idle in this country alone.

Yet, as indicated previously, the number of wells and the footage being drilled this year will compare favorably with any previous year, despite the fact that fewer rigs are in operation than formerly.

This means, simply, that the newer, bigger, and better equipment of today far surpasses in footage capacity the rigs of earlier days.

In connection with this circumstance that today's rigs are drilling more wells and more footage per month or per year than yesterday's rigs, the thought naturally arises that the East Texas field may have been responsible to a considerable extent. For in that field wells are considered comparatively shallow, and formations are soft and easy to drill, resulting in especially favorable development conditions; while the field has had exceptionally large numbers of well completions, more or less dominating the national picture in oil well drilling. Thus in East Texas a given rig would move from location to location in rapid succession, drilling a comparatively large number of wells in a year. And with a substantial proportion of United States drilling concentrated in East Texas, the number of rigs in operation during the year would be held down accordingly.

It is probably true that East Texas has tended, in this way, to hold down the number of rigs in operation. During the five years since its discovery, the field has furnished approximately 28 percent of all the completions in the United States. The dominant role taken by the big field is shown in the following table:

Year	East Texas Completions	Total U. S. Completions
1931	3600	11,716
1932	5840	14,290
1933	2496	11,700
1934	3762	17,508
1935 (7 months)	2758	11,806
Total for period	18,456	67,020

Drilling rigs have been able to make especially good records in East Texas, under the favorable conditions there. For instance, drilling contractors or oil companies commonly move machinery onto a location, rig up, drill a well, complete it in the 3650-foot pay zone, and move off, all within 11 or 12 days. They move on, rig up, and start drilling the first day. A period of 72 hours, or three days, is consumed in waiting for cement to set. Thus actual drilling time is around seven days.

In view of the above circumstances, it appears that East Texas has tended to circumscribe the need for drilling rigs. And insofar as that may be true, it would seem that the future may bring some increase in the number of rigs needed for carrying on a "normal" drilling volume. For East Texas is now well along toward the drilled-up stage, while other areas, generally, are experiencing revivals in drilling.

However, there is danger of placing too much emphasis on the influence exerted by East Texas on the national drilling picture. For in the first place, the 3660-foot depth in East Texas is substantially greater than the 2828-foot average depth for wells in the whole United States; being greater, in fact, than for any other district in the country, outside the Gulf Coast and California, the leaders in deep drilling. And in the second place, while East Texas drilling conditions are favorable, today's rigs and methods are also bringing fast drilling in other areas, comparing favorably with the records made in East Texas.

Even on the Gulf Coast, for instance, where oil sands are deep, the wells are being completed in comparatively short time. In the Thompson field, coastal Texas, which is 5400 feet deep, operators have been moving onto a location, drilling and completing a well, and moving off within 17 to 20 days, compared with the 11 or 12 days in East Texas. At Anahuac, new Texas Gulf Coast field, 7000 feet deep, the similar over-all time on a location has been held down to about 25 days in some instances, even with the field in the early stage of development. At Bosco, Louisiana Gulf Coast, one well was rigged up, drilled, and completed at 7849 feet, all within 21 days, including three days of fishing.

Thus despite the fact that East Texas has exerted some unusual effect on the national drilling picture, such effect probably has not been especially abnormal, after all. And even with East Texas fading into the background, there is likely to be a general continuation of the present situation, in which the industry is drilling a "normal" number of wells and "normal" or above-normal footage, with fewer rigs than formerly, due to improved equipment and methods.

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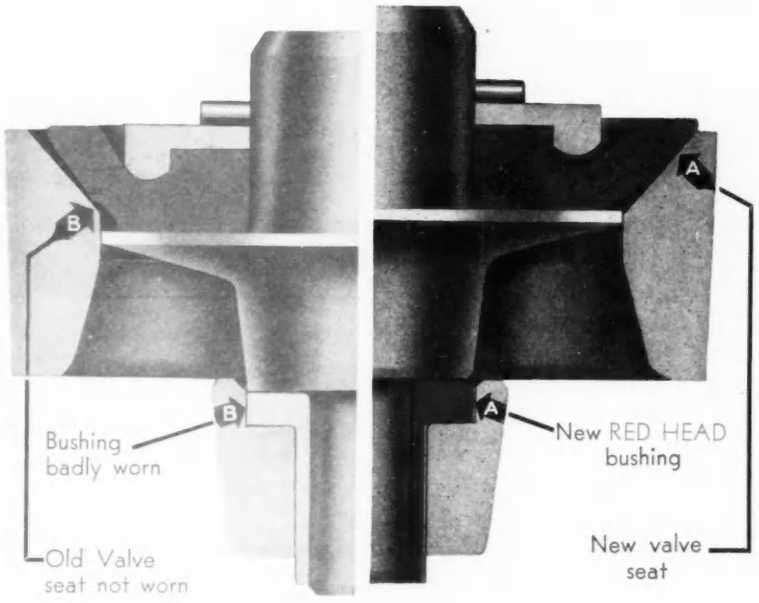

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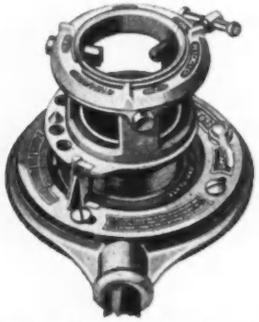

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A bright, neat, powerful, efficient tool.

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RIDGID PIPE TOOLS

Gas Engine Combustion

STUDY SHOWS CLOSER ATTENTION TO AIR FUEL RATIO WOULD INCREASE EFFICIENCY

By JOSEPH LISTON, Assistant Professor,
School of Mechanical Engineering,
University of Oklahoma

IN the field of steam power generation much attention has been given to combustion phenomena, and few indeed are the plants that do not maintain a check on heating value of the fuel, percent of CO_2 in the stack gases, and the color of the smoke. In the internal combustion engine field, these items are of parallel importance, but they have received less attention.

With engines burning gaseous fuels, the proportion of the various hydrocarbon types is usually known or can readily be found, and this makes possible the determination of theoretical air-fuel ratios, theoretical exhaust gas analyses, and theoretical heating values. Then, these values may be used as standards of approach in adjusting the engine to improve actual values.

Theoretically Correct Amount of Air

For combustion calculations, the following general equation is very useful

$$C_xH_y + (x + \frac{y}{4})\ O_2 + (x + \frac{y}{4})\ 3.78N_2 \rightarrow xCO_2 + \frac{y}{2}\ H_2O + (x + \frac{y}{4})\ 3.78N_2$$

where C_xH_y represents the hydrocarbon type such as CH_4, C_2H_6, etc.

$(x + \frac{y}{4})$ represents the volume of oxygen theoretically required for each volume of fuel

3.78 represents the proportion by volume of nitrogen to oxygen in the air

x represents the volume of CO_2 formed

$\frac{y}{2}$ represents the volume of water vapor (H_2O) formed

The same amount of nitrogen appears on each side of the equation since it does not enter into the combustion reaction.

Applying this equation to methane (CH_4):

$$CH_4 + (1 + \frac{4}{4})\ O_2 + (1 + \frac{4}{4})\ 3.78N_2 \rightarrow 1CO_2 + \frac{4}{2}H_2O + (1 + \frac{4}{4})3.78N_2$$

or

$$CH_4 + 2O_2 + 7.56N_2 \rightarrow CO_2 + 2H_2O + 7.56N_2$$

and for ethane

$$C_2H_6 + 3.5O_2 + 13.23N_2 \rightarrow 2CO_2 + 3H_2O + 13.23N_2$$

By inspection it is seen that the same number of atoms of each substance occur on each side of the equations, hence the equations are balanced.

The coefficients preceding each substance represent *Mols*, a mol of gas being an amount equal to its molecular weight in pounds. For example CH_4 has a molecular weight of $12 + 1x4 = 16$. Hence, a mol of methane weighs 16 pounds. Likewise a mol of C_2H_6 weighs 30 pounds, and a mol of nitrogen, N_2, weighs 28 pounds.

TABLE 1

GAS	Formula	Mol. Wt.	Theoretical A/F (by vol.)	Theoretical CO_2 in Exhaust (% by vol.)
Methane	CH_4	16	9.56	11.7
Ethane	C_2H_6	30	16.73	13.1
Propane	C_3H_8	44	23.90	13.7
Butane	C_4H_{10}	58	31.09	14.0
Ethylene	C_2H_4	28	14.35	15.0
Propylene	C_3H_6	42	21.50	15.0
Butylene	C_4H_8	56	28.70	15.0
Acetylene	C_2H_2	26	11.95	17.5

It has been found that a mol of any gas at a given temperature and pressure occupies a definite volume. The expression relating these facts is

$$P \times V = 1544 \times T$$

where P is the pressure in pounds per square foot absolute

V is the volume in cubic feet.

1544 is called the Universal Gas Constant.

T is the temperature in degree F. absolute.

Since the value 1544 applies to any gas not too near its boiling or condensation point, the volume of a mol of any gas will, at a given temperature and pressure, be the same as a mol of any other gas under the same conditions. At a pressure of 14.7 pounds per square inch absolute and a temperature of 60° F., a mol of gas will occupy a volume of

$$V = \frac{1544\ (60 + 460)}{14.7 \times 144} = 379 \text{ cubic feet.}$$

In the above expression for the combustion of methane, two mols of oxygen and 7.56 mols of nitrogen are required for the complete burning of one mol of CH_4, but, since a mol of each of these gases occupies the same volume at the same temperature and pressure, we may say that two cubic feet of oxygen and 7.56 cubic feet of nitrogen are required for the complete burning of one cubic foot of CH_4. That is the same thing as saying that the theoretical air-fuel ratio for methane is 9.56/1. Similarly, from the equation for the burning of ethane, $3.5 + 13.23 = 16.73$ cubic feet of air are required to completely burn one cubic foot of C_2H_6. The theoretical air fuel ratios for several other hydrocarbons are given in Table 1.

The complete combustion of any of the hydrocarbon fuel gases will form carbon dioxide (CO_2), water vapor (H_2O), and of course, the nitrogen (N_2) will pass

TABLE 2

Gas	Formula	Btu. Per Cu. Ft. of Fuel*	Btu. Per Cu. Ft. of Theoretical Air-Fuel Mixture
Methane	CH_4	1012	95.9
Ethane	C_2H_6	1762	99.4
Propane	C_3H_8	2509	101.0
Butane	C_4H_{10}	3261	101.9
Ethylene	C_2H_4	1641	107.0
Propylene	C_3H_6	2354	104.5
Butylene	C_4H_8	3087	104.0
Acetylene	C_2H_2	1483	114.6

*Haslam and Russell, Fuels and Their Combustion, p. 205.

through the engine unchanged. If combustion is incomplete, carbon monoxide (CO) will appear in the exhaust, and the proportion of CO_2 will decrease. Also, if an excess of air is taken into the engine, free oxygen (O_2) will appear and the percentage of CO_2 will again decrease. As carbon monoxide possesses usable heat energy, the appearance of this gas in the exhaust indicates inefficient combustion. When oxygen appears, part of the space that would otherwise be occupied by power producing fuel gas has been taken, hence, the appearance of a considerable amount of oxygen is usually accompanied by a loss of power.

In either of the above cases, the percentage of CO_2 in the exhaust is less, and, if a means of determining the CO_2 in the exhaust is available, a check on the performance of the engine can be made provided the amount of carbon dioxide that should appear under good conditions is known.

When one volume of CH_4 is completely burned, one volume of CO_2, two volumes of H_2O, and 7.56 volumes of N_2 appear in the exhaust. The percentage of each in a given volume of exhaust gas may be found by dividing each by the sum as follows:

$$\%CO_2 = \frac{1 \times 100}{1+2+7.56} = 9.45$$

$$\%H_2O = \frac{2 \times 100}{1+2+7.56} = 18.90$$

$$\%N_2 = \frac{7.56 \times 100}{1+2+7.56} = 71.65$$

When an Orsat or similar means is used to analyze the exhaust gases, however, the measurements are always made at temperatures below the boiling point of water, and, since the volume occupied by the water in condensed form is negligible for the amount of gas sample analyzed, the theoretical results for comparison with actual Orsat analyses, in the case of CH_4 would be:

$$\%CO_2 = \frac{1 \times 100}{1+7.56} = 11.7$$

$$\%N_2 = \frac{7.56 \times 100}{1+7.56} = 88.3$$

From this it is seen that in burning CH_4, the Orsat should show a percentage of CO_2 approaching 11.7. Actually, due to several factors, the percentage of CO_2 under good conditions in the two-stroke cycle engine would be unlikely to exceed seven or eight percent. Theoretical percentages of CO_2 for several fuel gases are given in Table 1.

The power output of an engine, for a given condition of adjustment and efficiency of operation is determined by the heat energy taken into the combustion chamber per unit of time. The heating value in B.t.u. per cubic foot for the different fuels varies over a considerable range, Table 2, but the heat energy taken into the engine per unit of time is determined by the heat energy per cubic foot of air-fuel mixture rather than by the heat energy per cubic foot of fuel. Thus, for CH_4, the heat energy per cubic foot is 1012 B.t.u., and for C_4H_{10}, the value is 3261, a heat content more than three times as high, but on the basis of B.t.u. per cubic foot of air-fuel mixture, the difference is only about five B.t.u. Hence, the power that the engine could develop on each of these fuels would be approximately the same.

It should be noted, however, that, in view of the rather large range in correct air-fuel ratios, the mixing valve adjustment will be different for the different fuels. For example, if the air control valve is set to properly burn C_2H_6, and then a considerable percentage of CH_4 is added to the fuel, the engine will be operating on a lean mixture, and the power output and economy will be poor.

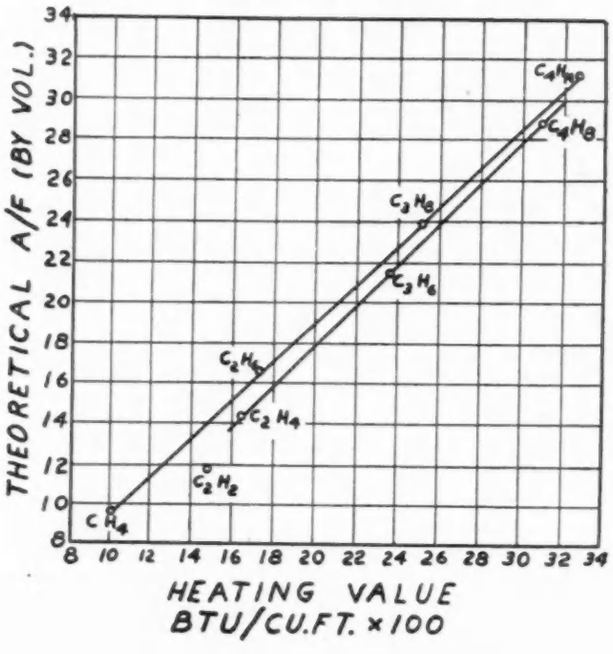
Figure 1 showing the variation of theoretical air-fuel ratio with heating value is of interest in this connection since the latter quantity is found in practically all routine gas analysis work. For any given series of hydrocarbons, the correct air-fuel ratio appears to vary directly with the heating value. Hence, changes in the quantity of air admitted may be made proportionate to the changes in heating value.

In domestic distribution systems, however, where heating value fluctuates, the adjustment of stoves, etc. would be a never ending job. In this case rich gas may be lowered in heating value by diluting with inert gases such as carbon dioxide or nitrogen. In spite of criticism by consumers, this method is justified, if the price of the gas is based on a given heating value and dilution does not lower the heating value below the B.t.u. content specified in the price.

Mixture of Gases

Very few if any natural gases available for engine use are composed entirely of one hydrocarbon. Usually two or more types are found together with small

FIGURE 1
Variation of air-fuel ratio with heating value.



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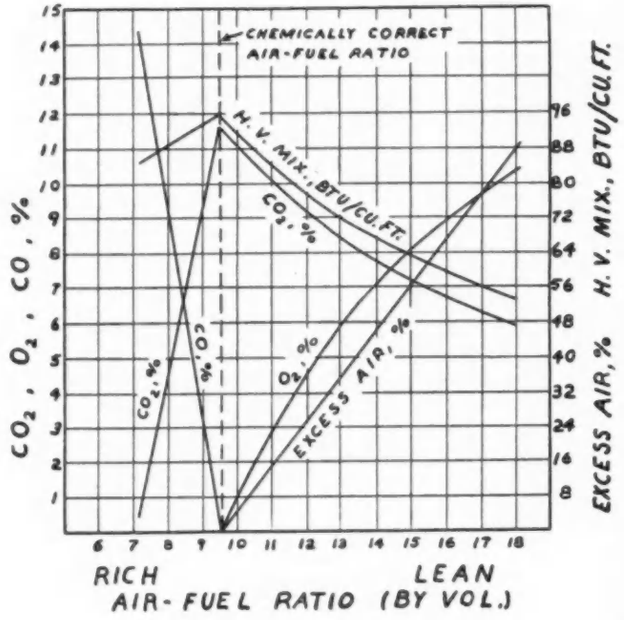

FIGURE 2

Theoretical combustion of methane at different air-fuel ratios.

quantities of inert gases such as N_2 and CO_2. For example, a recent analysis showed the following:

Constituent gas	Percent by volume (60 deg. F. and 14.7 lbs. per sq. in.)
CH_4	92.5
C_2H_6	7.1
CO_2	0.4

Considering a cubic foot of this gas, the air required to burn the CH_4 is

$$9.56 \times .925 = 8.84 \text{ cubic feet.}$$

The air required to burn the C_2H_6 is

$$16.73 \times .071 = 1.19 \text{ cubic feet.}$$

The air required to burn a cubic foot of the fuel is

$$8.84 + 1.19 = 10.03 \text{ cubic feet.}$$

The heating value of the CH_4 in a cubic foot of the fuel is

$$1012 \times .925 = 936 \text{ B.t.u.}$$

The heating value of the C_2H_6 is

$$1762 \times .071 = 125.5 \text{ B.t.u.}$$

The total heating value per cubic foot of fuel is

$$936 + 125.5 = 1061.5 \text{ B.t.u.}$$

The heating value of a fuel determined in this way will usually differ slightly from that found by a calorimeter, but, for most purposes, it is sufficiently accurate.

The theoretical exhaust gas analysis is found as follows:

For .925 cubic feet of CH_4

$$.925CH_4 + 1.85\ O_2 + 7\ N_2 \rightarrow .925\ CO_2 + 1.85\ H_2O + 7\ N_2$$

For .071 cubic feet of C_2H_6

$$.071\ C_2H_6 + .2485\ O_2 + .942\ N_2 \rightarrow .142\ CO_2 + .213\ H_2O + .942N_2$$

The total CO_2 formed per cubic foot of fuel burned is

$$.925 + .142 = 1.067 \text{ cubic feet.}$$

The CO_2 already in the fuel is .4 cubic feet. Hence, the total CO_2 appearing in the exhaust per cubic foot of fuel burned is

$$1.067 + .4 = 1.467 \text{ cubic feet.}$$

The total H_2O formed per cubic foot of fuel burned is

$$1.85 + .213 = 2.063 \text{ cubic feet.}$$

The total N_2 appearing in the exhause per cubic foot of fuel burned is

$$7 + .942 = 7.942 \text{ cubic feet.}$$

Disregarding the volume occupied by the condensed water vapor, the exhaust gas analysis is

$$\% \ CO_2 = \frac{1.467 \times 100}{1.467 + 7.942} = 15.58$$

$$\% \ N_2 = \frac{7.942 \times 100}{1.467 + 7.942} = 84.42$$

Combustion With an Excess of Air

Frequently, in the actual engine, an excess of air is necessary to obtain sufficiently complete combustion. That is, if just the correct amount of air for theoretical combustion is supplied, due to incomplete mixing of the fuel and air, all the oxygen will not come in contact with all the fuel, and, as a result, some of the fuel will be incompletely burned. It has been observed from laboratory tests that a small amount of excess air gives a higher thermal efficiency, but the maximum power that the engine can develop decreases with an increase in the percentage of excess air.

In the theoretical calculations, the oxygen in the excess part of the air passes through the engine unchanged. For example, the theoretical combustion of CH_4 with ten percent of excess air is

$$CH_4 + 1.1\ (1+\tfrac{4}{4})\ O_2 + 1.1\ (1+\tfrac{4}{4})\ 3.78N_2 \rightarrow 1CO_2 + \tfrac{4}{2}H_2O + .2O_2 + 1.1\ (1+\tfrac{4}{4})\ 3.78N_2$$

or

$$CH_4 + 2.2\ O_2 + 8.31\ N_2 \rightarrow CO_2 + 2\ H_2O + .2\ O_2 + 8.31\ N_2$$

The air-fuel ratio by volume is

$$\frac{2.2 + 8.31}{1} = \frac{10.51}{1}$$

The theoretical exhaust gas analysis, disregarding the volume occupied by the condensed water vapor, is

$$\% \ CO_2 = \frac{1}{1 + .2 + 8.31} = 10.52$$

$$\% \ O_2 = \frac{2}{1 + .2 + 8.31} = 2.10$$

$$\% \ N_2 = \frac{8.31}{1 + .2 + 8.31} = 87.38$$

The heating value per cubic foot of air-fuel mixture is

$$\frac{1012}{1 + 10.51} = 87.7 \text{ Btu.}$$

Comparing this value with that obtained for the correct air-fuel ratio, it is seen that less heat energy will be taken into the engine per unit of time. Hence, less power will be developed, and, as stated above, this has been verified by actual tests.

The variation of theoretical percentages of CO_2, O_2, and the heating value per cubic foot of air-fuel mixture for different air-fuel ratios corresponding to varying percentages of excess air are shown on the "Lean" side of Figure 2.

Combustion With an Excess of Fuel

When less than the theoretically correct amount of air is supplied, part of the fuel cannot burn completely. Although actual tests have shown some discrepancy, it is frequently assumed that all of the Hydrogen in the fuel burns first. Then the carbon burns to carbon monoxide, and if any oxygen still remains, part of the carbon monoxide burns to carbon dioxide.

Again using CH_4 as an example, and assuming a five

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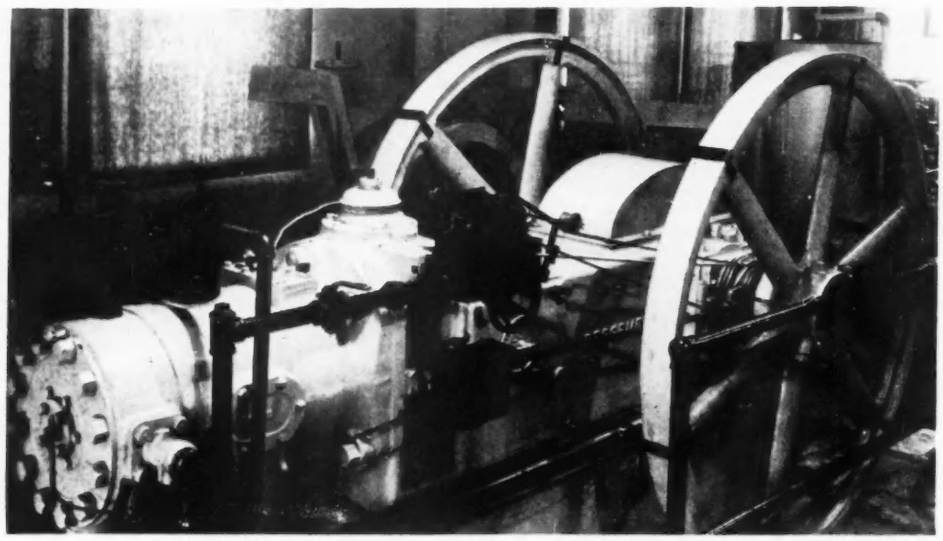

FIGURE 3

Two-stroke cycle gas engine used in determining the effect of air-fuel ratio on performance.

percent deficiency of air, the procedure in calculating is as follows:

$$CH_4 + .95\ (1 + \frac{4}{4})\ O_2 + .95\ (1 + \frac{4}{4})\ 3.78\ N_2 \rightarrow$$

$$Z\ CO_2 + (X—Z)\ CO + \frac{4}{2}\ H_2O + .95\ (1 + \frac{4}{4})\ 3.78\ N_2$$

In this expression, X corresponds to the subscript for C in the CH_4. Z may be evaluated as follows:

$$.95\ (1 + \frac{4}{4}) = 1.9 \text{ volumes of } O_2 \text{ are supplied.}$$

The oxygen necessary to burn the hydrogen to water vapor is

$$\frac{4}{2}\ O = 2\ O = 1\ O_2$$

The oxygen remaining after the hydrogen has burned is

$$1.9\ O_2 — 1\ O_2 = .9\ O_2$$

This will be divided between the CO and the CO_2 as follows

$$.9\ O_2 = Z\ O_2 + \frac{1}{2}\ (X—Z)\ O_2$$

since

$$(X—Z)\ O = \frac{1}{2}\ (X—Z)\ O_2$$

but, for CH_4, X= 1. Hence

$$.9\ O_2 = Z\ O_2 + \frac{1}{2}\ (1—Z)\ O_2$$

or

$$.9 = Z + \frac{1}{2}\ (1—Z)$$

Solving

$$Z = .8$$
$$1—Z = .2$$

Substituting these values in the above equation

$$CH_4 + 1.9\ O_2 + 7.18\ N_2 \rightarrow$$
$$.8\ CO_2 + .2\ CO + 2\ H_2O + 7.18\ N_2$$

As the amount of carbon, hydrogen, oxygen, and nitrogen appears on each side, the equation is balanced.

The air-fuel ratio by volume is

$$\frac{1.9 + 7.18}{1} = \frac{9.08}{1}$$

The theoretical exhaust gas analysis is

$$\%\ CO_2 = \frac{.8}{.8 + .2 + 7.18} = 9.78$$

$$\%\ CO = \frac{.2}{.8 + .2 + 7.18} = 2.44$$

$$\%\ N_2 = \frac{7.18}{.8 + .2 + 7.18} = 87.78$$

[1]Haslam and Russell, Fuels and Their Combustion, P. 205.

When 1+9.08=10.08 cubic feet of air-fuel mixture are burned under the above conditions, .2 cubic feet of carbon monoxide are formed.

Hence, $\frac{.2}{10.08} = .01984$ cubic feet of CO will be formed per cubic foot of air-fuel mixture burned. The heating value of carbon monoxide is 322.6 B.t.u. per cubic foot[1], and the lost heat to carbon monoxide per cubic foot of fuel burned is

$$.01984 \times 322.6 = 6.4 \text{ B.t.u.}$$

The net heating value per cubic foot of air-fuel mixture burned is

$$\frac{1012}{1 + 9.08} — 6.4 = 94 \text{ B.t.u. per cubic foot.}$$

As this is less than the heat liberated by a cubic foot of correct mixture, it would be expected that the power developed by the engine would be less. However, tests have shown that the power developed by a slightly rich mixture is greater than for the chemically correct mixture. This discrepancy is mainly due to the incomplete mixing of the fuel and air. Since some of the fuel is not burned, it would be expected that the efficiency would be less. This lowered efficiency with rich mixtures has been verified by tests.

The variation of theoretical percentages of CO_2, CO, and the heating value per cubic foot of air-fuel mixture for different air-fuel ratios less than the theoretically or chemically correct ratio are shown on the "Rich" side of Figure 2.

Some Actual Results

While some work has been done in investigating the effect of varying the air-fuel ratio in gasoline engines, there appears to have been very little research work of this type conducted on the two-stroke cycle gas engine. Hence, in an effort to check some of the foregoing theories of combustion, a series of tests was recently conducted on a gas engine in the Mechanical Engineering laboratories at the University of Oklahoma.

This engine, Figure 3, is a two-stroke cycle, single-cylinder unit of 35-brake horsepower rating at 180 revolutions per minute. Fuel consumption was determined with a gas meter, and air consumption, for the tests, was found from indicator cards on the compressor end of the cylinder. The air and fuel are mixed in the compressor end and then passed through the inlet port in the usual way. The power output was absorbed and measured by a Prony brake. The air consumption was varied by adjusting the bell on top of the air inlet valve, and a multiplying lever (not shown in the photograph) was used for more sensitive adjustment. During the tests sufficient data were taken to determine

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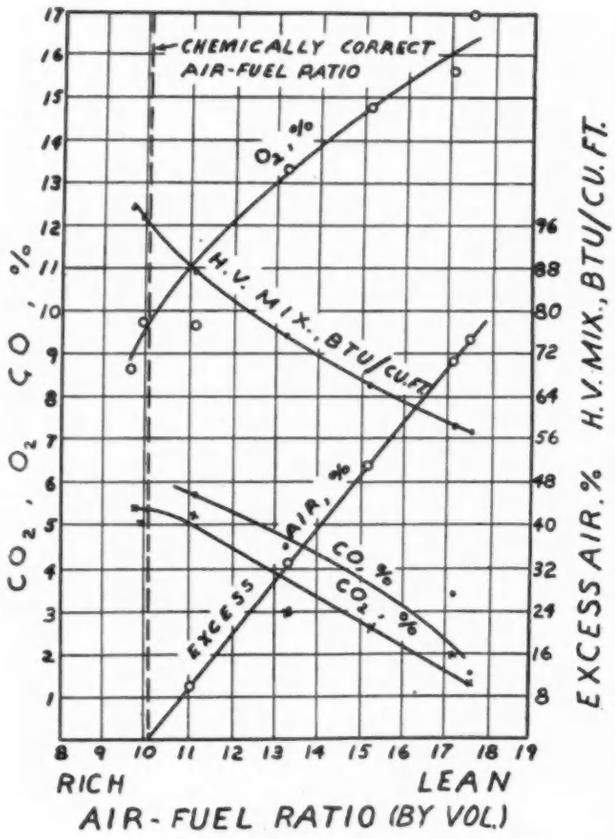


FIGURE 4

Actual combustion results from an engine burning natural gas at various air-fuel ratios.

the information given in Figures 4 and 5. The engine was operated at air-fuel ratios ranging from the richest to the leanest at which the engine would run. The fuel analysis was as follows:

Constituent gas	Percent by volume (60 deg. F. and 14.7 lbs. per sq. in.)
CH_4	92.5
C_2H_6	7.1
CO_2	0.4

Referring first to Figure 4 and comparing it with Figure 2, it is seen that the percentage of excess air and the heating value of the mixture closely parallel the theoretical values for CH_4. The fact that, in the actual results, the heating value of the mixture does not decrease on the rich side is due to disregarding the CO content.

The oxygen in the exhaust is, for any air-fuel ratio, much higher in the actual case. This is due partly to incomplete mixing of the fuel and air and partly to the fact that some fuel and air escapes to the exhaust during the scavenging period. This last is an inherent weakness of two-stroke engines as compared to four-stroke cycle types as it results in higher specific fuel consumptions, i. e., more fuel is required for a given power output, but it is largelv offset by lower first and maintenance costs. By the use of so-called fuel savers, which admit fuel only after the exhaust port is covered, fuel loss to the exhaust, in two-stroke cycle types, is practically eliminated. However, this results in less time for mixing the air and fuel and in more complexity to the design.

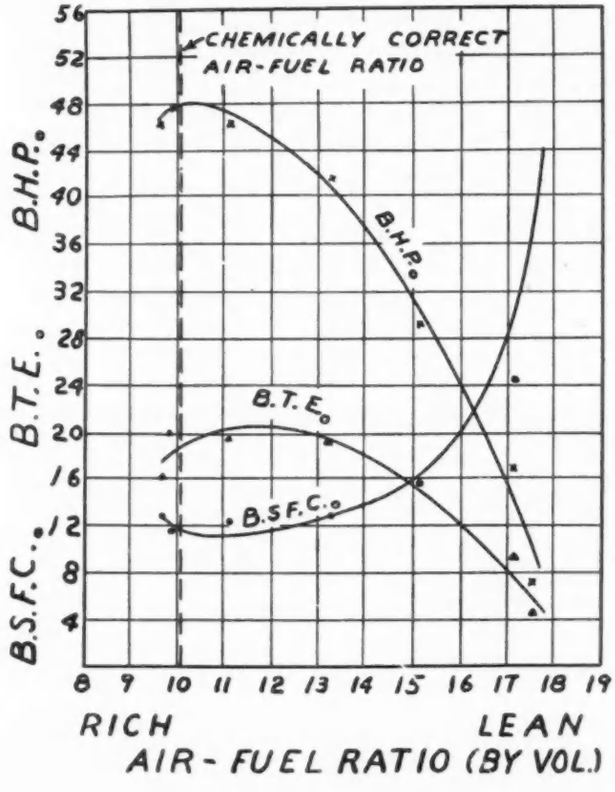
The carbon dioxide appearing in the exhaust is much less than in the theoretical case for CH_4. This may be explained by the presence of considerable carbon monoxide. The existence of so much carbon monoxide in the presence of oxygen may seem somewhat surprising, but if, due to poor mixing, the oxygen does not come in contact with the fuel, combustion cannot take place. Also any oxygen passing directly into the exhaust will not combine with the carbon because it is below combustion temperature. It is seen from Figure 4 that, in order to get reasonably complete combustion, considerable excess air must be used.

The use of large amounts of excess air to reduce the carbon monoxide content is not altogether advisable, however. This statement is explained by reference to Figure 5. In this figure it is seen that, with increasingly lean mixtures corresponding to larger percentages of excess air and smaller amounts of carbon monoxide, the brake horsepower that the engine can develop decreases rapidly. The brake thermal efficiency appears to be highest at a slightly lean mixture, but, for very lean mixtures, it also decreases rapidly, and, of course, the brake specific fuel consumption in cubic feet of gas per brake horsepower hour increases rapidly for very lean mixtures.

It was found during the tests that very small changes in the adjustment of the air control bell made marked changes in the air-fuel ratio. In view of the marked variation in horsepower and efficiency with air-fuel ratio, it would seem advisable in natural gas engine installations to give closer attention to air valve adjustment and perhaps provide a more sensitive means of adjustment.

FIGURE 5

Power output, fuel consumption, and efficiency from an engine burning natural gas at various air-fuel ratios.



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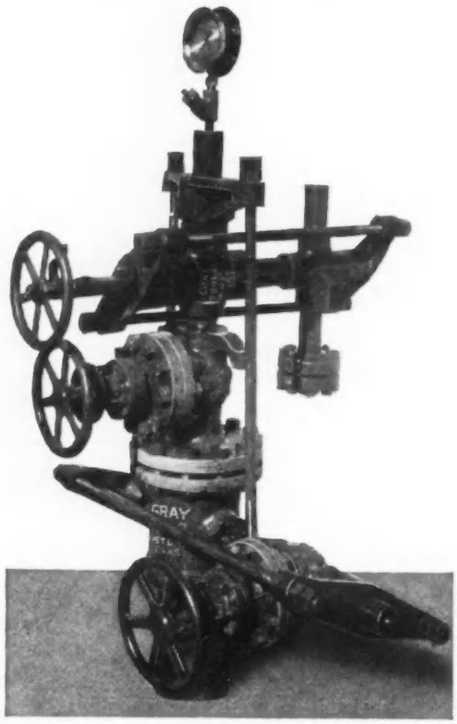

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By A. L. FORBES, General Superintendent,
El Paso Natural Gas Company, and
Western Gas Company, El Paso, Texas

PURIFICATION of sour gas produced in Lea County, New Mexico, is one of the most important operating problems confronting gas pipe line companies in that district. The purification or treating plants used by one concern are described in this article. Several problems are encountered in operating these treating units, but they have been overcome. Measurement, dispatching and compressor difficulties are other interesting problems discussed in the article.

THIS paper was prepared with the idea of relating some of the experiences encountered in operating a certain high-pressure natural gas transmission pipe line system.

This certain system consists of a total of 715 miles of main lines, composed of 218 miles of 16-inch; 224 miles of 12¾-inch; 233 miles of 10¾-inch; 40 miles of 8⅝-inch, and 53 miles of 6⅝-inch and 4½-inch branch lines. The maximum working pressures of the various lines are as follows: 16-inch, 450 pounds per square inch; 12¾-inch, 650 pounds per square inch; 10¾-inch, 650 pounds per square inch; 8⅝-inch, 6⅝-inch and 4½-inch, 500 pounds per square inch. The system is an interstate as well as an international one as its lines are laid in the states of Texas, New Mexico and Arizona and in the state of Sonora, Republic of Mexico. The only source of supply is from the Lea County, New Mexico, gas field, which is 650 miles from its furthermost point of consumption. The system has two compressor stations on its 16-inch main line, each station having a total of 2280 horsepower and two compressor stations on its 12¾-inch line, one station having 2280 horsepower and the other 1520 horsepower. Upon the completion of the system, each of the various size lines were tested to the above maximum working pressures. The 16-inch line has been operated at its maximum working pressure and the 12¾-inch line has been operated at 600 pounds per square inch.

Two Purification Plants

The gas in the Lea County, New Mexico, field from which this company receives its gas requirements, contains approximately 300 grains of hydrogen sulphide per 100 cubic feet and cleaning this gas furnishes this company with most of its operating problems.

The sour gas is purified in two purification or treating plants. These treating plants are similar in construction and each consists of two sets of scrubbing towers which were developed by this company and in which a solution of soda ash and water comes into intimate contact with the sour gas under a pressure of 450 pounds. The two sets of scrubbers are operated in series; the first set acting as a stripping plant and the latter as the final cleaning plant. After the soda ash solution has absorbed the hydrogen sulphide in the gas, it is reactivated either by aeration or heat and is then picked up with pumps and re-circulated in a continuous cycle, the gas passing from the stripping plant into the finishing plant where it comes into contact with the freshly reactivated solution and thence into the main line. By operating the scrubbing towers in series in the above manner a more consistent result in purification can be obtained. Results of hourly tests made on the purified gas indicate the presence of approximately three grains of hydrogen sulphide, mercaptans and other sulphur compounds per hundred cubic feet. However, more elaborate tests are run periodically in this company's field laboratory, the results of which show that no hydrogen sulphide is present until the results of the hourly field tests exceed six grains per hundred cubic feet. These mercaptans and other sulphur compounds furnish a distinct odor to the purified gas which is very helpful in detecting leaks in the main line as well as in domestic consumer's premises. Unusually high depreciation in the lines used to circulate the soda ash solution is experienced, chiefly on account of the presence of oxygen in the solution which it has picked up during its repeated aeration. The average life of these lines is three years. However, in those

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instances where heat instead of aeration has been used to reactivate the soda ash solution, no unusually rapid depreciation has been observed and this company has found that by using heat to reactivate the soda ash solution, similar results in purification were obtained with approximately 60 percent less soda ash solution than is required where aeration is used in reactivating the solution. Also, this method appreciably decreases maintenance costs on pumps, circulating lines and other equipment.

High winds which prevail in this territory during the spring months blow large amounts of soda ash solution from the aerating towers and in the winter months it is necessary to use steam in the towers to prevent the solution from freezing on its way down the aerating towers.

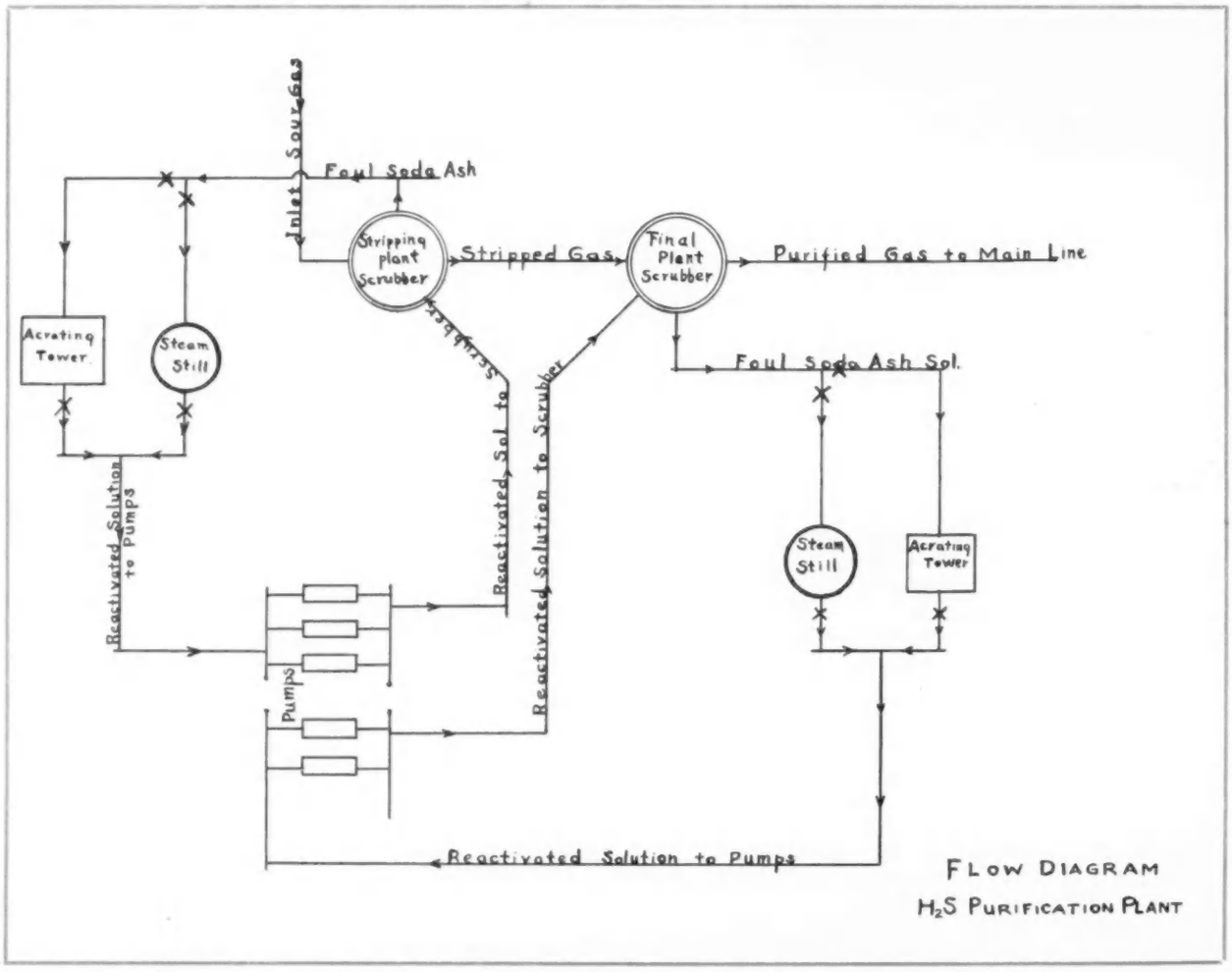
The sour gas often brings oil over with it into the treating towers and causes considerable trouble and additional expense. The oil thus brought over emulsifies with the soda ash solution and causes foaming in the chamber where the gas is separated from the solution. Considerable gas is lost and fresh soda ash must be added when this occurs. The oil finally works itself into the aerating tower basin where it is skimmed off.

There are numerous other problems encountered in operating these treating plants at this pressure but to discuss them all would require too much time. This past winter the maximum amount of gas treated in one day was 47,000,000 cubic feet and it might be of interest to know that no internal corrosion has been noted in the main line although numerous inspections at various points have been made.

The gas, as it enters the main lines from the gas field is saturated by virtue of the treating process to which it has been subjected. The gas as it comes from the field is compressed from 250 pounds to 450 pounds at a point approximately 80 miles from the field and compressed once more from 250 pounds to 600 pounds at the El Paso compressor station which is approximately 220 miles from the field. This past winter considerable trouble has been experienced with the freezing of the line at a point 30 to 40 miles west of the El Paso compressor station but no freezing has occurred in the pipe line from the field to El Paso. The cause of the freezing at this point has not been definitely determined but this company is working on the theory that the compression up to 600 pounds at El Paso has brought about this condition. Temporary relief has been effected by installing a main line drip approximately 10 miles from the point of freezing, towards the El Paso compressor station.

Measurement Problems

The measurement department was confronted with an interesting problem when they attempted to make the results from a recording type calorimeter check



FLOW DIAGRAM
H_2S PURIFICATION PLANT

★

In industry today there are found many names symbolic of integrity, dependability and progressiveness. Associated with industrial rubber goods there is no finer name than **HEWITT**, founded on a 76 year record of giving to industry superior industrial rubber products. For HEWITT produces industrial rubber goods exclusively, the best craftsmen in the rubber industry have joined hands with advanced science to build longer life into hose and belting for any type of service. And we are rightfully proud of the enviable service records **HEWITT** is establishing . . . records that fully justify the trust industry has placed in us.

"There's No Substitute for Skill"

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NORVELL-WILDER SUPPLY COMPANY
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HOSE **CONVEYOR AND TRANSMISSION BELTS** **PACKING**

★REED

ROLLER BEARING ROCK BITS

★

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for
Straight Hole
Drilling
with Light
Drilling Weights

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Hard Drilling
with Heavy
Drilling Weights

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MORE HOURS OF SERVICE ON BOTTOM

EXPENSIVE ROUND TRIPS REDUCED

REED ★

FULL HOLE TOOL JOINTS

FOR

INCREASED DRILLING SPEEDS

★

DECREASED DRILLING COSTS

AN ASSURANCE OF

DEPENDABILITY

FROM PIONEERED EXPERIENCE AND CONTINUED LEADERSHIP

with those obtained from a Junkers type calorimeter. The recording calorimeter consistently recorded the gas as containing from 1085 B.t.u. to 1090 B.t.u., while the best results the most careful operators could obtain on the Junkers type calorimeter varied from 1040 B.t.u. to 1070 B.t.u. These results seemed to vary with the time of day at which they were taken. The manufacturer of the recording calorimeter was appealed to and after the failure of several of their factory representatives to obtain a check between the two instruments, they sent a man from their research department. After innumerable test runs it was decided to effect as near as possible the ideal conditions for running calorimeter tests, thereby eliminating as far as possible the correction factors applicable, as shown in the United States Bureau of Standards tables. As the average relative humidity in El Paso, Texas, during the summer months is around 12 percent it was necessary to spray water in the room in which the tests were being conducted until a relative humidity of 80 percent to 85 percent was reached. Having the other conditions right, tests were continued and results obtained checked very closely with the recording type instrument. A humidifier was then developed whereby the air passing to the burner in the Junkers type calorimeter was held at 80 percent to 85 percent humidity, thereby eliminating the most serious of the correction factors. These humidifiers are now in use over this company's entire system and results obtained from four company operated calorimeters and four instruments operated by industrial consumers do not vary over five B.t.u. in their monthly average.

Dispatching Problems

In connection with exporting gas into the Republic of Mexico, gas is measured and sold under the metric system. An orifice type meter is installed on the Mexican side of the boundary line for the purpose of paying import duty on such gas sold in Mexico. This meter must be read each morning by a representative of the company in conjunction with a Mexican customs officer and duty is paid each day on the amount of gas passed into Mexico the previous day. This company has attempted to have the Mexican government permit us to post a bond of sufficient amount to eliminate this expensive practice but to date has been unsuccessful.

The dispatching of gas is handled at the company's El Paso City Gate Station and presents many problems as the furthermost consumer is 650 miles from the gas field, which, under normal operating conditions, requires four and one half days for gas to reach such point from the field. Upon completion of the 10¾-inch pipe line to Tucson and Phoenix, Arizona, the dispatchers noticed a discrepancy in pressures which they received from Douglas, Tucson and Phoenix. Tucson, 108 miles northwest of Douglas, reported more pressure than Douglas. Phoenix, 112 miles farther northwest than Tucson, reported a higher pressure than Tucson. Pressure gauges were checked but the reports continued the same. The reason for such occurrence was finally attributed to the difference in elevation between the various points. The elevation at Douglas is 3930 feet above sea level; Tucson is 2423 feet above sea level or 1507 feet lower than Douglas and Phoenix is 1108 feet above sea level or 1315 feet lower than Tucson. During the days of very low consumption the pressures recorded were as much as 26 pounds different from the theoretical pressures as figured from Weymouth flow formula, but would check within a pound or two when a correction factor was applied amounting to the weight of a column of gas whose height was equal to the difference in elevation between the two points under the average pressure in the line.

Compressor Difficulties

The greatest problem in operating this company's compressor stations is in connection with its cooling water. As the main line runs through desert country, a scarcity of water is not an unusual occurrence. However, with one exception, water in sufficient quantities was located and analysis of such showed that it was suitable for use in an open system. Zeolite treating plants of sufficient size were installed to provide ample make-up under ordinary conditions. However, these plants have proved too small, due to the unusual climatic conditions which prevail. During an actual test recently conducted under average operating conditions, with only one 760-horsepower engine operating, the loss during a 12-hour run amounted to 7471 gallons and the permanent hardness of the water built up from four grains to 5.5 grains. During the days of high winds the loss during a 24-hour period has amounted to 125 percent of the amount in the system. This company now contemplates the installation of closed systems at all its compressor stations.

After their completion, these compressor stations were run only periodically and numerous dark stains and some pitting was noticed on the piston rods after each shut-down. This staining occurred where the piston rod came to rest on the packing while the engine was down and was probably caused by the wet exhaust gasses remaining in the cylinder. This condition has been remedied by shutting off the water to the exhaust before the engine is shut down and afterward, turning the engine over with compressed air a sufficient number of times to clean itself and the lines of all exhaust gasses.

Because of the numerous sand storms in this area during the spring months, it has been necessary to install dust-proof hoods to cover the piston rods on each of the engines. These hoods have so far operated very satisfactorily and have afforded excellent protection to the rods.

Pipe Line Inspection

Because of the isolated location of the main lines in respect to towns or even ranch houses, the pipe lines are inspected by three line riders who cover the entire distance in automobiles over a road built adjacent to the pipe lines for that purpose. These roads are of utmost importance in time of main line trouble as they provide the only means of access to the line. The main line in its entirety is subjected to severe floods during the rainy season and maintenance of both the pipe line and the road is heavy after each season.

In recounting the above experiences, the writer has attempted to mention only those which he has found peculiar to this particular gas transmission system as compared to other properties which he has operated and trusts that the few points mentioned, with the corrective measures applied, may prove of interest to operators of transmission systems in similar areas.

Vocational Training

OF MODERNIZED TYPE FOR FIELD MEN PROVED HELPFUL BY RESULTS

By F. B. TAYLOR
Panhandle Eastern Pipe Line Company
Stinnett, Texas

RECENT general advances in the oil and gas industries; in equipment, application of methods and general technology, has demanded a greater understanding of the fundamentals of the various branches of the industry on the part of employes. This demand has been met by carefully planned-employe training, and undoubtedly has fostered a trend that is permanent and that will lead to a greater executive-employe stability.

In the past, various methods of employe training have been tried with indifferent success. The employe disliked the idea of giving an additional two or three hours, without pay, to a company that had hired him for a definite shift. The presentation of the courses was usually in a semi-college, or formal, manner. Generally, the subjects were instructed by one well-versed in basic theory, rather than by a man who had gained a position through practical application of principles. Moreover, the subjects taught were to aid the particular company sponsoring the school, and as such the student had little choice of subjects.

Naturally, certain employes gained through such classes, but these were of the type that would have obtained the same knowledge through personal initiative, without the courses being offered. The mental attitude of the employe who should have received the greatest benefit was not receptive.

These obstacles have been very successfully overcome in the petroleum industry series of vocational training courses. This series of courses and the instruction is entirely divorced from companies having employes enrolled. It is in no way a mandatory task. Instructors are chosen from men familiar with the application of the involved problems through personal experience, rather than from a fundamental standpoint.

Outstanding among the many vocational schools in Texas, are those of the Panhandle. And in this area,

A reproduction of the certificate given Texas vocational training graduates.

State Department of Vocational Education

TRADE AND INDUSTRIAL DIVISION

This is to Certify that _____

has satisfactorily completed a Unit Course in _____
Subject

relating to _____ at _____, _____
Vocation or Trade — School — City

covering _____ hours, from _____ 19____ to _____ 19____

_____ Unit Course No. _____
City Superintendent of Schools
City Director of Industrial Education

_____ _____
Teacher — State Director of Industrial Education

Issued at Austin, Texas, _____ 19____.

TABLE I

Outline of Science as Applied to Petroleum Production and Refining

CHAPTER HEADS

1. Matter and Motion.
2. Properties of Materials.
3. Weights and Measures.
4. Work and Machines.
5. Leverage.
6. Mechanical Devices used in Industry.
7. Power and Friction.
8. Laws of Motion.
9. Mechanics of Liquids.
10. Mechanics of Gases.
11. Heat and Expansion.
12. Transmission of Heat.
13. Vaporization and Condensation.
14. Principles of Chemistry.
15. Common Elements and Compounds.
16. Acids, Alkalies and Salts.
17. Chemistry in Industry.
18. Magnetism and Electricity.
19. Strength of Materials.
20. The Flow of Liquids in Pipes.

the school at Whittenburg, not only has received a high ranking, but enrolled more students for the 1934-35 classes than any other in the state, of which there are 34 (January 1, 1935.)

A total of 19 classes were enrolled in the Whittenburg locality, with a total student body of over 400. Only one instructor was accepted for each class. These men were selected locally and all are engaged in the immediate working branch of the subjects for which their selection was made.

Of the 400 students signing for the instruction, 90 percent completed the courses chosen. Two hundred received the state certificate upon completion of the course. This latter figure, apparently rather low, is due to the fact that of the 360 men completing their courses, only 50 percent of the initial enrollment were eligible to apply for certificates. Besides successful completion and understanding of the courses, a student must attend at least 80 percent of the regular classes, and as many of those enrolled were shift men, it was not possible for all to attend each scheduled class.

It is interesting to note that although this type of education has been available for some years past in cities of 25,000 or over, it has apparently been received with greater enthusiasm in the smaller communities than in the more heavily populated districts.

Organization of Classes

This general type of instruction, related to virtually all branches of industry, is a development of the Smith-Hughes Act of 1917. Now of national scope, it is supported by federal available funds (50 percent), state funds (25 percent) and local funds (25 percent). As a consequence no company having men enrolled are asked to contribute to the cost. In some cases, as at Whittenburg, the local 25 percent may be obtained by the nominal charge of $1.50 to each student as an entrance fee, and as an assurance of good faith on his part.

As this vocational work is under the auspices of the Department of Industrial Education of the various states, supervision and organization are controlled by the local public school authorities cooperating with the state department. In Texas George H. Fern, Austin, is the state director. Late legislative enactment has further divided the state into regions, each with a regional federal-state representative.

At any locality where 10 or more workers desire instruction in a particular subject, and where there are facilities for instruction, classes may be formed. Such organization should be handled through the local school superintendent. Proper publicity, letters of notification, personal contacts, published notices, announcements and circulars, advertise the classes and aid in increasing the initial enrollment.

Subjects Offered

The unit courses offered to the oil field worker are divided into three natural groups. First, basic courses; mathematics for oil field workers and elementary science. Second, general courses; internal combustion engines, electric power, geology, steam power, and others. Third, special courses treating of work and including among others, rig building, pulling wells, emulsions, paraffin problems, methods of lifting oil, numbering 25 in all, or a total number of available subjects of 35.

Text books on these subjects may be obtained from the state department for each student. Instructors' manuals are likewise furnished. Every possible aid is extended the local community in the organization of classes and in the selection of relative subjects.

The treatment of the various unit courses is expressively to reach the workers of the industry. Through the efforts of the Topical Committee of the A. P. I., which has assembled the text book data, a thorough and comprehensive treatment is available on each subject. These texts are frequently supplemented by recent authoritative articles.

Not only is enough information obtainable throughout the courses to give the learner a greater understanding of his work, but also they touch in a practical manner on allied subjects; and go into fine points and explanation.

As an illustration the basic science course, actually a combination of chemistry, electricity and physics, is divided into chapters as shown in Table I.

And the degree of thoroughness of study is apparent in the steam power course, the outline of which appears in Table II.

Selection of Instructors

Certain qualifications are necessary for those selected to teach proposed classes. Primary among these is that the teacher has shown evidence of leadership and mastery of the work in that particular field. He should have held positions of responsibility and the application for a teacher's certificate must be recommended by the local public school's director.

It is not necessary that he be a graduate of a college or high school, but he must have sufficient experience to interpret adequately, and in a logical interesting manner, the material.

Manner of Instruction

Taking the Whittenburg classes as a concrete example, the manner of teaching is entirely informal. The teacher and each student have text books, and from the assigned lesson, particular points are taken for consideration.

It is the instructor's task, first, to explain the basic principle involved; second, the manner of application, and last, the correlation of this information to some operation familiar to all. The classes assume the order of an open discussion on any subject or upon any relative subject mentioned. Each subject is cleared as it is brought up unless it necessitates the study of unavailable material.

Questions are directed to individuals or to the class

TABLE II

Outline of Text on STEAM POWER for Use in Evening School Classes for Oil Field Workers

I. STEAM BOILERS.

A. Classification.
1. Locomotive type boilers or oil country type.
2. Return tubular boilers.
3. Fire tube boilers.
4. Water tube boilers.
5. Tubular boilers with Morrison fire boxes.
6. Rate of evaporation.
7. Heating surface.
8. Water space.
9. Horse power rating.
10. Boiler insulation.

B. Constructional Details.
1. The shell.
2. Tubes.
3. Tube sheets.
4. Crown sheet.
5. Fusible plug.
6. Water leg.
7. Mud ring.
8. Man hole and hand hole plates.
9. The dome.
10. Fire box.
11. Stay bolts and braces.
12. Boiler settings.
13. Joints.
14. Rivets.
15. A. S. M. E. boiler code.
16. Stamping-location, etc.
17. Materials.

C. Boiler Fittings.
1. Steam gauges.
2. Water gauges.
3. Try cocks.
4. Water alarms.
5. Blow-off valves.
6. Lever safety valves.
7. Pop valves.
8. Smoke stacks.
9. Feed water pumps.
   a. Duplex pumps.
   b. Single cylinder pumps.
   c. Pump troubles.
10. Injectors.
   a. Single tube.
   b. Double tube.
   c. Injector troubles.
11. Burners.
   a. Gas.
   b. Oil
12. Feed water heaters.
   a. Open.
   b. Closed.
13. Automatic feed water level regulators

D. Operating of Steam Boilers.
1. Setting of boilers.
2. Firing.
   a. Regulating burners.
   b. Regulating draft.
   c. Regulating feed water.
3. Blowing down.
4. Cleaning flues.
5. Cutting boiler in on battery.
6. Treating feed water.
7. Preventing foaming.
8. Cleaning the boiler.
9. Taking boiler out of service

E. Boiler Inspection.
1. Hydrostatic tests.
2. Hammer tests.
3. Flue gas analysis.

F. Boiler Repairs.
1. Removing scale.
2. Cleaning flues.
3. Rolling and beading flues.
4. Welding flues.
5. Removing flues.
6. Use of ferrules.
7. Testing steam gauges.
8. Setting pop and safety valves.
9. Replacing hand hole and man hole gaskets.
10. Caulking seams.
11. Replacing staybolts.
12. Replacing fusible plugs.

G. Boiler Troubles.
1. Foaming.
2. Priming.
3. Blisters.
4. Leaky seams and rivets.
5. Leaky check valves.
6. Scale in feed line.
7. Burner troubles.
8. Leaky pop or safety valve.
9. Broken water glass.

II. THE STEAM ENGINE.

A. Advantages as a prime mover.

B. Principle of Operation.
1. Simple engines.
2. Compound engines.

C. Horse Power Rating.
1. A. P. I. horse power standards.
2. Calculating horse power.

D. Constructional Details.
1. Cylinder and steam chest.
2. Piston and piston rod.
3. Crossheads
4. Crankshafts.
   a. Center crank.
   b. Side crank.
5. Bearings.
   a. Plain.
   b. Roller.
6. Eccentrics.
7. Governors.
   a. Flyball.
   b. Shaft.
8. Stuffing boxes.

E. Valve Gears.
1. The simple D-slide valve.
2. Piston valves.
3. Other balanced valves.
4. Poppet valves.
5. Uniflow engines.
6. Lap and lead.
7. Cut-off and expansion.

F. Reverse Gears.
1. Stephenson link motion reverse.
2. The Wolfe reverse gear.
3. The Walschaerts reverse gear.
4. The Lucey reverse gear.

G. Valve Setting.
1. Setting a simple D-slide valve.
2. Setting a piston valve.
3. Setting a valve on a reversible engine.
4. Setting duplex pump valves.
5. Reversing a single eccentric engine.

H. Lubrication.
1. Cylinder lubrication.
2. The hydrostatic lubricator.
   a. Single connection.
   b. Double connection.
3. Mechanical lubricators.
4. Boll Weevil lubricatior.
5. Bearing lubrication.

I. Operation.
1. Starting and stopping.
2. Reversing.
3. Filling and adjusting hydrostatic lubricators.
4. Filling and adjusting mechanical lubricators.

J. Setting Engines.
1. Aligning.
2. Building foundations.

III. PIPING.

A. Sizes of Pipe.
B. Pipe Fittings.
C. Expansion and Contraction.
1. Expansion joints.
2. Swings.
3. Expansion bends.

D. Pipe Insulation.
E. The Carrying Capacity of Pipes.
F. Vibration in Steam Pipes—Water Hammer.
G. Steam Traps and Separators.
H. Unions.
1. Flanged.
2. Ground joint.

I. Headers.
J. Connecting Boilers to Steam Mains.
K. Blow-off Piping.
L. Feedwater Piping.

IV. VALVES.

A. Globe Valves.
B. Gate Valves.
C. Plug Valves.
D. Check Valves.
E. Blow-off Valves.
F. Throttle Valves.
G. Pet Cocks.
H. Relief Valves.
I Pump Valves.

V. STEAM ENGINE REPAIRS.

A. Adjusting Piston for Clearance.
B. Packing Piston Rod.
C. Packing Valve Stem.
D. Replacing Cylinder Head Gasket.
E. Aligning Crosshead.
F. Adjusting Main Bearing.
H. Replacing Piston Rings.
I. Replacing Piston Rods.
J. Adjusting Eccentric Straps.
K. Seating a Slide Valve.
L. Re-seating Throttle Valve.

VI. THE INDICATOR.

A. Principle of Operation.
B. Setting Up and Taking Cards.
C. Interpretation of Indicator Cards.

VII. HAZARDS OF STEAM POWER PLANT OPERATIONS.

A. Lighting Fires Under Boiler.
B. Water Glasses.
C. Scalds and Burns.
D. Caulking Leaks Under Pressure.
E. Water Hammer.
F. Low Water Dangers.
H. Dangers of Scale Accumulation.
I. Faulty Safety Valves.
J. Failure to Open Cylinder Cocks before starting cold Engine.
K. Making adjustments While Engine Is Running.
L. Use of Extension Lights.

GREEN STRAND

The Hallmark of Hazard

● Evidence of the superiority of Hazard wire lines is found in the fact that this company has among its list of customers many firms who have bought Hazard lines continuously for 40 and 50 years.

The finest grade of all Hazard lines is found in the Green Strand. Whether Hazard non-preformed or Lay-Set Preformed, and regardless of their constructions, *all* Hazard lines made of Improved Plow Steel are identified by the Green Strand. Green was chosen as the identifying color because green signifies safety. Being made of Improved Plow Steel, Hazard Green Strand is the *safest* of all wire lines.

When you buy Green Strand, or see it in use—you see wire line of a quality that has kept customers on our books for over a half-century—the wire line that is safest for both men and production.

Hazard Wire Rope Company, *Inc.*
WILKES-BARRE, PENNSYLVANIA
An Associate Company of the American Chain Company, Inc.
In Business for Your Safety

District Offices:
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in general and call for further explanation. Or the instructor may be called upon to expand from his own experience a subject touched on only lightly. A keen and critical analysis of each problem, and a study of commonly omitted but relative facts, through well selected and qualified instructors has been largely responsible for the success of the Whittenburg enrollment.

Blackboard illustrations are used whenever possible. When obtainable a projector and slides are used and occasionally motion pictures may be had. For the class in oil field mathematics a slide rule about eight feet in length and with numbers sufficiently large to be read from the back of the room, aids in visual calculations.

The skillful handling of the subjects in order to emphasize the important points without allowing the student to loose interest in apparent inconsequential detail is a responsible task. Ordinary academic instruction is not advisable, for it definitely reduces the teaching to the undesirable level of work.

A class will obtain more from a course if each individual takes the floor occasionally to present his personal experiences or views. And this is frequently a difficult attitude to gain. As a result, the classes are given more in the nature of conferences than as student-teacher instruction; the teacher in one sense merely directing the trend of thought.

The Whittenburg classes are held in the local modern school building, twice each week for two hours. Each unit course requires a total of 48 hours of instruction. As many classes are held as needed, concurrently, with an instructor for each class, and with the superintendent of the Phillips Independent School District, directing. W. A. Clark, Jr., superintendent of this district in the past, is leaving. His place will be taken by John L. Mizell, formerly of Borger.

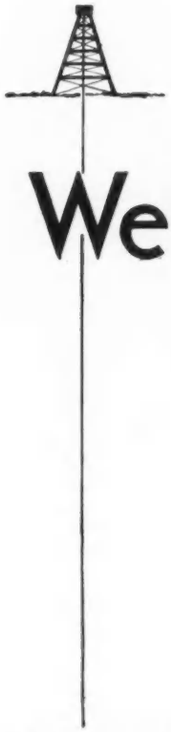
Results

Using the aroused interest in the Whittenburg school as a yardstick, it was found that not only did those completing the initial course desire more advanced training, but that the primary courses would again be filled. Individuals expressed entire satisfaction and encouraged others to enroll.

A major operating company, although having no connection with the school, made a request through its management that it would appreciate a record of the grades made by any of its employes enrolled, provided that this would violate no confidence. Also, it was reported to the school that those men who had taken training had a greater and more valuable conception of the ultimate importance of their particular job as applied to the broader scheme of the company's endeavor. Routine reports from student employes were definitely superior to reports from the same men prior to their training.

All students completing the unit course, with an attendance of 80 percent of the hours and otherwise qualified, received a certificate as shown, and signed by George H. Fern, state director. It has been proposed that a certain number of these certificates, being duly received, may be accepted for a type of state diploma.

The fact that a man's value to a company, or to an industry, is dependent upon his ability to apply his specialized knowledge, has long been admitted. Of late, far more so than previously, this fact has determined the size of the monthly check. Ability and knowledge must go hand in hand, and where the knowledge is obtainable, as in the described industrial courses, the ability can usually be developed.



Well!

Well!

Well!

Straighten Out... those
CROOKED Holes
with
SPERRY - SUN
Well-Surveying Instruments

One Kept Straight with the
H - K
(Hewitt) (Kuster)
Clinograph

Introduces a radical improvement and exclusive method of recording in single readings both the amount and the direction of inclination, utilizing the triangular suspended cross hair plumb bob and floating compass principles with automatically operated photograph camera. The H-K Clinograph (designed for open holes only) is lowered on a sand or bailing line at a speed ranging from 400 to 800 feet per minute. Permanent, accurate records on paper discs are available within five minutes after removing instrument from hole.
(U. S. Patent 1,812,994 and others pending.)

One Kept Straight with the
SURWEL
Clinograph

The most accurate and practical method ever devised for measuring the degree and direction of deviation. The SURWEL is a gyroscopic Clinograph which provides a true map of the well at all depths, prepared from actual photographic records. Not affected by *Tortuosity* nor by *Magnetic Influence* when recording. Self-checking — produces duplicate records, i.e., going in and coming out.

(U. S. Patents 1,124,068, 1,812,994, 1,959,141, 1,960,038, and others pending.)

One Kept Straight with the
SYFO
Clinograph

Daily use of the SYFO Clinograph permits accurate control of inclination in drilling operations. These tests are accurately and easily made *without* the use of dangerous acids. The SYFO can be used on a wire line or as a "Go-Devil" running inside the drill stem or on sand or bailing line in open hole. It affords a quick, inexpensive daily record on paper of vertical deviation in drilling—records for permanent filing.

(U. S. Patent 1,962,634 and others pending.)

Anchoring bottom plug nose to instrument.

Reading the photograph story just told by a SURWEL run.

Tightening up on SYFO case preparatory to lowering into hole.

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Reworking Small Wells

FOUND PROFITABLE BY OPERATOR WHO HAS DEVELOPED STANDARD PROCEDURES

By EARL S. POST, Staff Writer

RECONDITIONING of approximately 1000 wells in three shallow Texas fields has given H. H. Coffield, independent operator, Rockdale, considerable information on handling stripper production. Inexpensive methods employed have proved most profitable, and at the same time have greatly increased the ultimate recovery from these almost depleted districts.

Aside from the mechanical problems, a very important question is answered, that being the true definition of a stripper well and its possible profit. Entering into this study is the ultimate life of the well, the cost to recondition, future production expenses, etc., as well as the investment in the hole, which could be partly recovered through the salvaging of the equipment above and below the ground.

A stripper well provides a question rather hard to answer. What might be considered a stripper well in one area would not be in another. In the opinion of Mr. Coffield, a stripper well is a producer with the lifting cost of the oil only slightly less than the price received for the oil produced therefrom. Some of this operator's most profitable wells in the Corsicana field, Navarro County, are producing from one to 1½ barrels per day from a level of about 900 feet. Wells with a depth of 3000 feet would certainly not be profitable with this production. A stripper field is usually considered such when the pumping production ranges from one to 10 barrels per day under intensive pumping, the production depending on depth.

Many Factors to Consider

When a well's lifting cost exceeds the price received for the production this operator attempts to increase the output by reconditioning. If efforts fail, the well is abandoned and the equipment salvaged. If a well has produced more than 90 percent of its oil, or if it produces less than one barrel per day, it is generally not worth re-working, unless the production is from lime, the last resort in this case being acidizing.

As for spacing, the position of wells has little effect on the reconditioning possibilities. Porosity of the formation from which the oil is produced and whether or not there is a water drive forcing the oil into the wells does, however, tend to influence the reconditioning of closely spaced wells.

It has been the practice of Coffield interests to purchase run down leases through the central portion of Texas for the specific purpose of reconditioning them and again placing them on production. The majority of the activity has been centered around three fields, being mainly Corsicana, Navarro County; Minerva-Rockdale, Milam County; and Chapman, Williamson County, the total holdings before reconditioning being close to 1000 wells.

In purchasing these leases, many things enter into

Pulling a well to clean and acidize; tractors are used for power in this operation.

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the value of the production. The location is of great importance, its proximity to pipe lines or refiners who would be prospective buyers of crude, depth of the wells, formation from which it produces, normal life of such formation, the length of time the lease has been producing, the amount of pipe recoverable from the wells, and the condition of the equipment determining its salvage value are among other most important considerations.

The above gives very definite information as to the amount of recoverable oil, probable cost of reworking, cost of lease, operation cost of property until depletion and amount of salvage. With these figures in hand, the quantity of profit can be determined.

Tests and Records Are an Aid

With the above satisfactorily established and the lease purchased, this operator usually starts trying to improve the production and lower operating costs. Each well is tested to ascertain its actual production and records are kept accurately for about two weeks. If the production is negligible, both tubing and rods are pulled to learn the condition of the pumping equipment at the bottom of the hole. This usually is found to be in bad condition. New working barrels, cups, balls and seats are immediately installed, the testing then continued.

After first tests are complete, additional reworking is resorted to. In serpentine fields, where oil is of paraffin base, liners usually are clogged, sometimes to a point where they will quit producing. Steam is then applied under pressure to clear the paraffin, the results in many cases being most pleasing. If, however, the well fails to respond as desired, the amount of cement used on the casing is determined and the pipe pulled, the salvage being deducted from the cost of the well.

Much study and thought must be given to the condition of the producing formation before abandonment. If it is at all possible that the application of acid would improve the production, a chemical processing company usually is consulted. If it is deemed advisable, an ample shot of acid is tried before final abandonment. In some cases, wells can be washed with hot oil, sufficiently opening the formation to allow the production to be restored.

One very outstanding conclusion, however, is that it is advisable to abandon all stripper wells immediately if they fail to respond after the installation of new bottom-hole equipment and the application of oil, steam or acid. Further attempts to boost their output generally result in considerable expense and the results obtained seldom provide more than enough profit to pay the cost of the second reconditioning work after the first has failed.

While the servicing of stripper wells as above outlined in search of improving their production usually entails quite an item of expense, the Coffield interests have found that it is ordinarily quite profitable, because nearly all of them, due to run down equipment and lax overseeing, are usually in the lowest state of upkeep, and the leases on which they are located are in very shabby repair.

After the run-down wells have been serviced, and either their production improved or the wells abandoned as worthless producers, the consolidation of tanks, lines, powers and other ground equipment is carried out as far as possible. Tanks are cleaned, and replaced when necessary, and everything put in first class working condition. In this way, the overhead expense is naturally reduced to a minimum, the result being further increased profits.

In operating stripper production, the cost of lifting oil is so near the amount of money received for the production, that all possible economies must be resorted to. Contrary to the belief of many, the installation of cheap, second hand equipment is not the short cut to profits in this type of production. The initial cost of reconditioning a well may be a slight bit below the cost of installation of good equipment, but breakdowns, pulling jobs, etc., which obviously result from this practice, are so expensive that the small saving, plus a portion of the anticipated profit is eliminated.

Large Percentage Reconditioned

The greater portion of the reconditioning work by this operator has been in the Minerva-Rockdale district of Milam County, where production is found in the Minerva sand of the Navarro age at depths ranging from 700 to 1400 feet. This is a rather old field, but is providing a good profit.

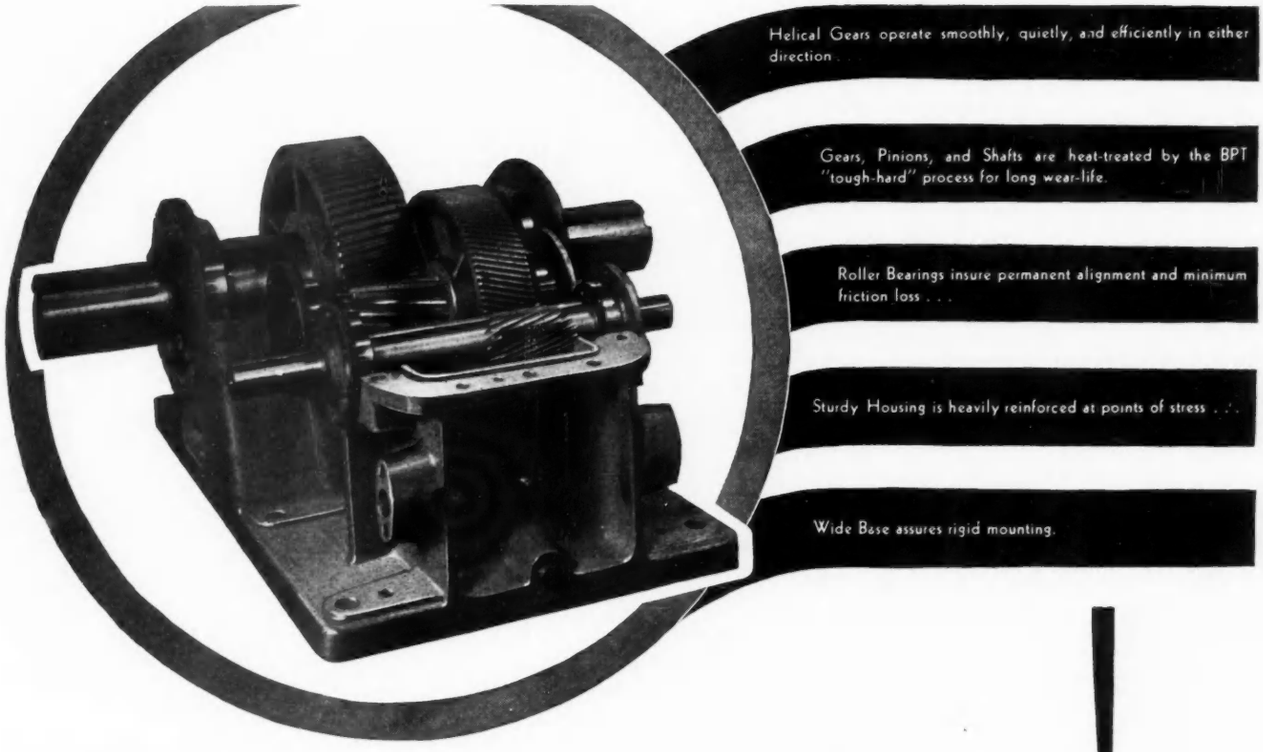
In the above field, Mr. Coffield and associates have taken over 625 wells for rehabilitation. Of this number 425 have been reconditioned into producers, while 200 have been abandoned and equipment salvaged. The oil is paraffin base, hence it was necessary to resort to the use of steam under pressure to clean liners, tubing, etc., as well as use hot oil to circulate in the hole. The results in this field have not been up to the standard of other fields in which this work has been done, but a fair profit has been obtained.

Of 69 wells reconditioned in the Chapman district of Williamson County, only 10 were abandoned and 59 were placed on production. Approximately 70 percent of the reconditioned wells proved profitable, the other 30 percent being finally abandoned and equipment salvaged.

Chapman field is at the northeastern end of South Texas' serpentine zone. Production comes from serpentine, and a formation referred to as serpentine cap rock. The latter is a conglomerate, very limey and highly porous. During the early days of the field, several of these 1400- to 1700-foot holes flowed at the rate of 5000 barrels per day initially. The oil is a paraffin base and tends to clog equipment above and below the ground.

Several methods of reconditioning were employed in this field. Several wells were washed with hot oil to clean the paraffin from the liner and open pores in the formation. The oil was applied under a temperature of 180 degrees. In most cases this application proved successful. Acid was used to treat other wells not so materially affected by paraffin. This was done when liners were not so stuck in the hole that they could not be removed. Acidizing work involved using of 2000 gallons of acid under pressure of 72 hours. In the majority of the reconditioning cases, it was found necessary to install new bottom-hole equipment.

Corsicana field of Navarro County, provided an interesting and successful sort of development, in as much as only 65 wells were abandoned out of 300 holes studied for reconditioning. The rest of the wells were reworked and proved profitable. The production in this field comes from the Navarro sands at about 900 feet, the oil being both light and heavy. Reconditioning work in this field was done in about the same manner as in the other two districts, with the exception that no acid was used. New bottom-hole equipment was installed in the larger number of wells.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These units may be driven by electric motor, oil engine, or by single or multi-cylinder gas engines. Normal oil field rating 10 to 45 hp. at 20 strokes per minute.

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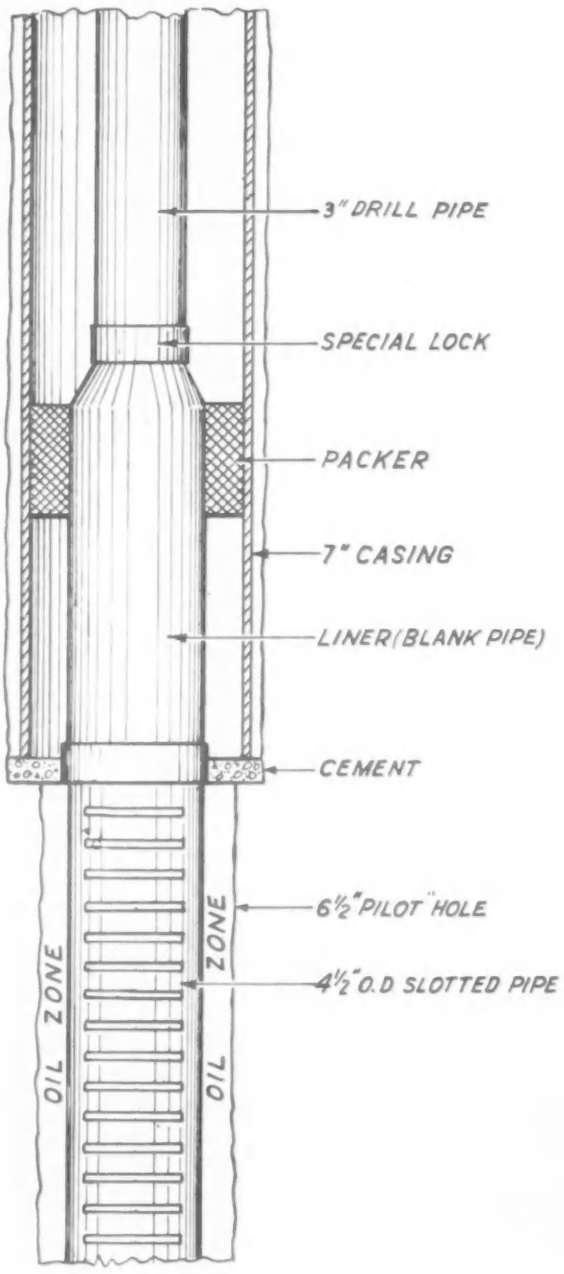
Screen and Packer

SETTING METHOD BEING USED IN BOSCO FIELD IS NEW TO THE GULF COAST

By CHARLES LEYENDECKER
Staff Writer



Setting program of Superior Oil Producing Company at Bosco.

A NUMBER of Gulf Coast companies are studying screen and packer programs in an effort to obtain more effective completion methods. Completion of small producers in areas that normally yield good wells, questionable results after placing wells on production, and other influences are factors causing dissatisfaction with previously used completion methods. A new method of completing wells has been introduced into the Gulf Coast by Superior Oil Producing Company in the Bosco field of Acadia and St. Landry parishes, Louisiana, and it is attracting considerable attention.

The practice being used by Superior Oil Producing Company is really a California completion method, but it has not been used previously in the Gulf Coast.

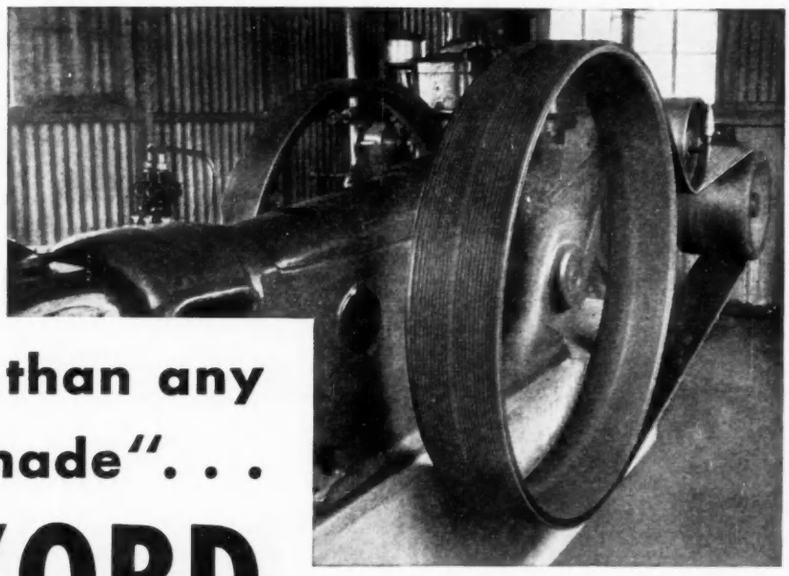
In drilling the 7000- and 8000-foot holes at Bosco, Superior Oil Producing Company usually penetrates to within several hundred feet of the producing sand before cores are taken. Cores are then taken down to the producing sand. After encountering the sand, a 6½-inch "pilot" hole is cored into the oil sand, taking in as much of the formation as possible. Seven-inch casing is set on top of the sand. After the hole is cleaned out the drill collar and bit are removed and the liner, which is blank pipe, is set on top of the 4½-inch O.D. slotted pipe, with a packer above the liner. This "setting" is then run into the hole on the bottom of three-inch drill pipe, with the slotted pipe being set into the pilot hole.

Upon setting the slotted pipe in the pilot hole, weight is added to the string of drill pipe, which forces the packer to the top of the cement and to the bottom of the liner. While adding this weight to the "setting" a special patented lock is unfastened from the liner with a short turn of the drill pipe. The drill pipe is then disconnected from the setting, leaving the slotted pipe in the pilot hole with the liner and packer set in place. The 2½-inch tubing is run down to the top of the liner and a Christmas tree is installed with heavy installations. The well is then washed in and completed.

The feature of the completion is that the slotted pipe is made in different lengths for each well. In some wells the pilot hole is cored deeper and a larger piece of slotted pipe is used.

The Marginulina producer, Prejean 3, was drilled to 8607 feet after topping the oil sand at 8581 feet. After setting seven-inch casing on top of the oil sand the plugs were drilled. Superior Oil Producing Company set 15½ feet of 4½-inch .020 slotted pipe with 30 feet of liner (blank pipe). Two and half-inch tubing was hung at 8448 feet. The well came in for a producer through an 18/64-inch choke.

Gilmer BELTS



This endless Kable Kord operates on an idler drive in the Air Lift Plant of the Snowden Oil Company, Kilgore, Texas.

. . . "more pull per square-inch than any other flat belt made". . .

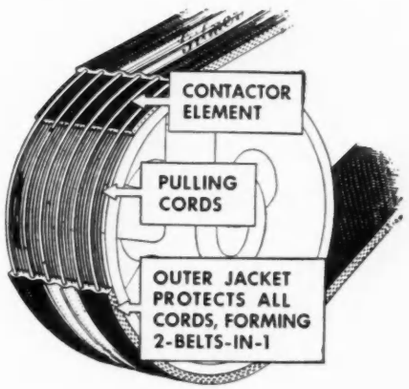
KABLE KORD

Kable Kord doesn't merely stay on flat pulleys . . . it *grips* them . . . hugs them snugly.

Kable Kord is "two-belts-in-one". Its lower section, made up of pulling cords, transmits the load. The upper Kable Kords, acting as a "contactor", squeeze the pulling cords securely to the pulley. This principle gives Kable Kord, on flat pulleys for group drives, or short centers and pivoted motor bases, *more pull per square-inch than any other flat belt made.*

It will be to your advantage to learn more about Kable Kord. When the Gilmer Engineer calls, give him a few minutes of your time. Today, write for the Kable Kord Data Book. It's free.

L. H. GILMER CO., Tacony, Philadelphia



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1. Made endless and in rolls
2. Increases production
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6. Has inherent ruggedness
7. Has more pull per square-inch
8. Wears longer
9. Requires no belt dressing

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Through an exclusive process, Gilmer is now equipped to supply both V-belts and Kable Kord belts in a type that is effectively resistant to oil. If you have belting trouble due to a bad oil condition, it will pay you to write us for the facts about Gilmer Oil-Resistant Rubber Belts.

Manufacturers **OF COMPLETE LINE OF POWER BELTING**

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Roving Frame Belts · Moulded Rubber Belts · Winder Belts · Spinner Belts · Refrigerator and Washing Machine Belts
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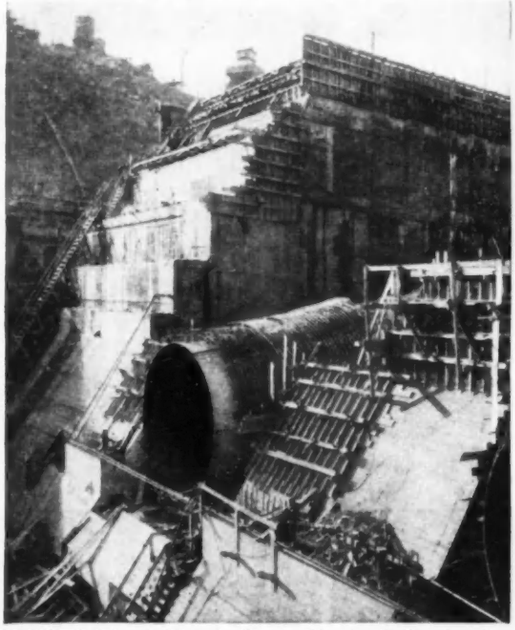
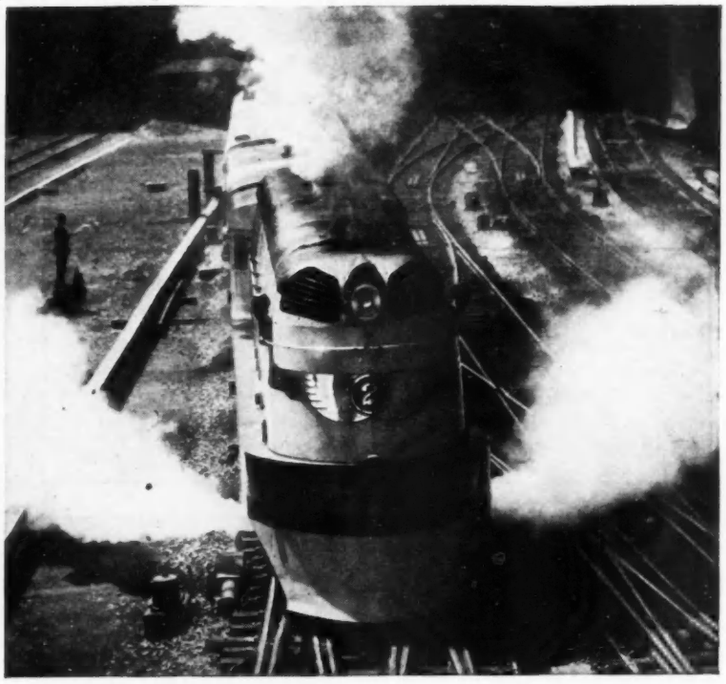
32,000 FANS PROVE SINCLAIR RADIO PROGRAM BUILDS SALES

SINCLAIR MINSTRELS on tour. The value of the minstrel radio program in building sales for dealers, distributors and jobbers was strikingly demonstrated when the offer of a limited quantity of minstrel song books brought over 32,000 requests from one announcement. Hundreds stated that the program had made them Sinclair customers. It is just one of Sinclair's sales-building methods. For full details of the value of the Sinclair franchise, write to Sinclair Refining Company (Inc.), 45 Nassau St., New York City.

112-POUND CLUSTER of prize-winning grapes displayed by Bee Connor. Most U. S. Agricultural Experiment Stations use Sinclair lubricants in equipment necessary for conducting experimental work for improvement of various crops.



PENSTOCK at Norris Dam. Most of the trucks, tractors, power shovels, drills, etc., used in building this TVA project are Sinclair-lubricated. The use of Sinclair lubricants on projects such as this, by great air lines, in industry and in millions of motor cars, shows why Sinclair is known as "America's leading lubrication company."



"HIAWATHA", the new 120-Mile-an-hour streamlined locomotive for service on the Chicago, Milwaukee and St. Paul Railroad. This great transcontinental system is one of 150 American Railroads that rely on Sinclair lubricants for dependable lubrication at low cost.

Markets Unsteady

AS INDUSTRY AWAITS OUTCOME OF CALIFORNIA SITUATION

THE oil markets have continued to be generally unsteady, and the immediate outlook is somewhat obscure. In California, determined efforts are under way, in the hope of restoring crude and gasoline prices to higher levels, within a few weeks. Outside of California, the markets have been generally favorable, in the face of the West Coast disturbance; but some signs of weakness showed up last week, including retail gasoline price-cutting in the East, and sagging of tank car prices of low octane gasoline in the Mid-Continent, by one-eighth cent per gallon.

Kerosene tank car prices in the Mid-Continent also were down one eighth cent. But the prices of higher octane gasolines continued to hold.

Although exhibiting unsteadiness, the Mid-Continent tank car prices are comparatively high, being around the peak levels of 1935, and the highest for five years.

It has been generally recognized, however, that the market now is entering a critical period, in which consumption will decline seasonally, with the end of vacation time. And the reaction of gasoline prices will depend greatly on how rigidly refinery operations are controlled.

Hot Oil Increases

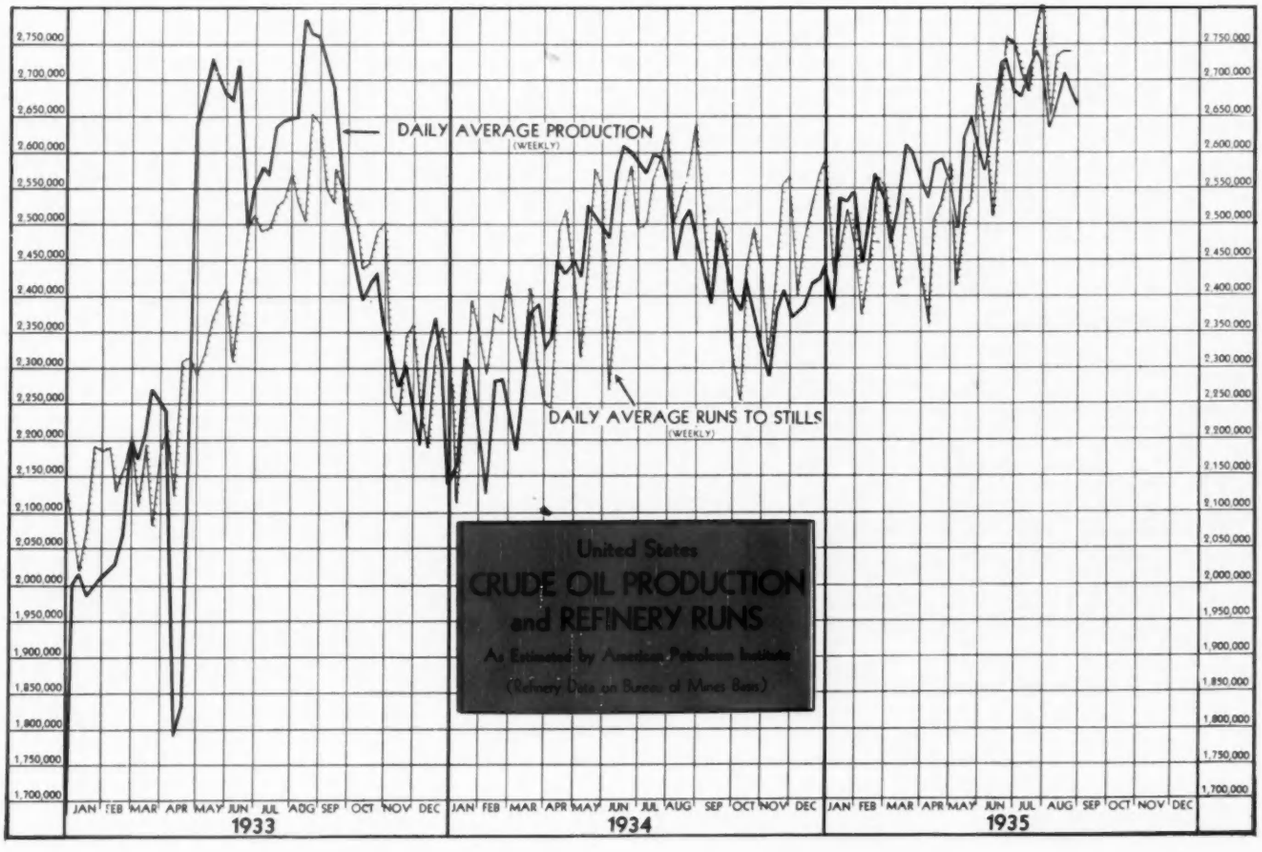
Aside from the seasonal contraction of demand, a factor that appears to be assuming appreciable importance is the continued expansion of hot oil output in East Texas. The illegal production there has risen above 50,000 barrels daily, and it is naturally exerting an adverse effect on the markets within Texas. Fortunately for other states, the Texas hot oil is largely prevented from encroaching on the markets outside Texas, through operation of the federal tender board under the Connally Act.

The one eighth cent per gallon decline of the third-grade gasoline at refineries applied to all sections of the Mid-Continent. The decrease brought U. S. motor gasoline of that grade, or below 62 octane, to 4½ cents a gallon in East Texas and North Texas and to 4⅝ cents in Group Three (Oklahoma) region. Standard grade, 62-67 octane, continued unchanged at 5 cents a gallon in East Texas and 5⅛ cents in North Texas and Oklahoma. Premium grade, 68-70 octane, was likewise unchanged at 5½ cents in East Texas and 5⅝ cents in North Texas and Oklahoma.

Kerosene was off one eighth cent per gallon throughout the Mid-Continent, being quoted at 3⅛ cents in East Texas and North Texas and at 3¼ cents in the Group Three territory.

California crude oil producers late last week were making determined efforts to reinstate voluntary proration on a basis that would assure restoration of the prices that prevailed prior to August 29. Producers of at least 95 percent of California production must sign the agreement strictly to adhere to allotments, before the voluntary program will be launched. Producers of about 80 percent of the state's production had signed late last week, and it was hoped that the required number would sign by about September 15.

If and when the crude production control program is launched, efforts



will be concentrated on readjustment of retail gasoline prices. In that connection, it is felt that chances are good for success, if the crude control materializes.

Meanwhile, two major companies, Standard of California and Union Oil, had reduced retail gasoline prices two cents a gallon on all grades in Washington, Oregon, Nevada, Alaska, the Hawaiian Islands, and those portions of California and Arizona where reductions had not already been made.

In Greater Los Angeles, many independent brands of gasoline were selling at nine to 11 cents, including taxes. There had been, meanwhile, practically no change in tank wagon prices or fuel oil prices.

No improvement is expected in the retail gasoline price war on the Pacific Coast until the California crude price situation has been adjusted.

Mid-Continent Control Efforts

In view of the disturbed markets on the West Coast and the seasonal tapering off of gasoline consumption, special efforts are being made in the Mid-Continent to keep crude production within market requirements. State authorities of Texas and Oklahoma, two of the three leading producing states, have cooperated by prescribing allowables within Bureau of Mines estimates of demand. Representatives of the six states that are participating in the Interstate Compact are scheduled to meet in Oklahoma City, September 12, to further that project. Those states include Texas, New Mexico, Oklahoma, Kansas, Colorado, and Illinois.

Markets in East

From Boston it was reported last week that price cutting on third grade or unbranded gasoline was widespread in New England. In much of Massachusetts such material was being sold by virtually all independents early in the week at 8½ cents a gallon plus four cents in taxes; although major companies were maintaining a 12½-cent plus tax price for their regular grades.

In the face of the disturbed retail gasoline market in the East, a five-cents per barrel increase in Pennsylvania grade crude was announced September 6. The South Penn Oil Company posted such an advance on certain grades of Pennsylvania crude, and The Tide Water Pipe Line, Limited, also announced a five-cent increase for the Bradford and Alleghany districts.

HOT OIL INCREASES

In East Texas as more plants start operating

PROPOSED curtailment of crude throughput by East Texas refiners beginning September 1, so as to offset seasonal decline in consumption has failed to assume the proportions anticipated by East Texas Marketing Company, an organization representing the large and more stable refining units and sponsors of the plan. Reduction in crude runs has been limited to plants that qualify for federal tenders, but the cutback voluntarily made by these plants has been partially offset by resumption of operations by small skimming plants. There were 29 plants in operation late last week as compared to 25 one week previous.

Production of hot oil in East Texas field is credited with having taken an upturn the past week. Accurate estimate of the volume is impossible because of the large percentage of plants operating on illegally produced oil that has been converted into a legal status through the state's confiscation policy.

Reports indicate that refiners processed about 52,900 barrels of confiscated oil and currently produced hot oil daily for the week ending September 2. No effort is made by the railroad commission or the attorney general to prosecute operators engaged in producing in excess of their proration allowable. However, these two state enforcement bodies are attempting to hinder the traffic in illegal production by blocking shipments, with railroads and pipe lines held responsible for products transported, while tank truck shipments are occasionally interrupted when corgoes are not supported by properly approved tenders.

In view of the comparatively negligible obstacles placed by the state authorities in the path of the refiners specializing in illicit practices the volume of excess production from the field is small. Activities of the federal tender board on duty at Kilgore are not complicated by politics, and all products leaving the field for interstate markets must be supported by approved tenders. However, a sizeable volume of refined and semi-refined products are moving daily via tank truck fleets from the Gladewater and Kilgore refining centers to Shreveport and other points along the east border of Louisiana.

Authority of the federal board to halt such shipments has been submitted to a trial court, and decision is now pending.

Decline of gasoline prices quoted by East Texas refiners to tank truck dealers to level ranging from three to 3½ cents per gallon had led to retail price wars in Dallas, Fort Worth, Houston and other major consuming points within trucking distance of the field. A price of 10 cents per gallon, including five-cent tax levy, predominated in Dallas and adjoining communities the past week. These market disturbances are eliminating independent refiners in the affected areas, even though the plants are operating on oil confiscated by the state in East Texas and sold for 20 cents per barrel.

Transportation costs and extra expenses, identified as attorney fees, boost the gross expenditure per barrel to a level that does not permit the plant owner to compete with gasoline hauled from East Texas by trucks.

East Texas Tank Car Shipments

Week Ending September 1, 1935

PRODUCTS	No. Cars	Estimated Gallons
Gasoline	584	4,715,125
Casinghead Gasoline	212	1,794,754
Fuel Oil	167	1,536,600
Distillate	89	730,094
Kerosene	43	358,575
Crude Oil	39	335,486
Gas Oil	38	309,282
Naphtha	33	263,484
Residuum	28	234,473
Topped Crude	2	18,367
Total	1,263	10,296,241
Total Previous Week	1,331	11,222,498
Interstate	555	.....
Coastwise	408	.....
Intrastate	273	.....
Total	1,263	.....

Summary of Wells Completed in the United States Week Ending August 31, 1935

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total Completions 1935	Total Completions this date 1934
Alabama	...	...	...	...	.....	4	3
Arkansas	...	...	...	...	.....	93	53
California	14	11	1	2	13,380	568	251
Colorado	...	...	...	...	.....	8	14
Illinois	...	...	...	...	.....	9	14
Indiana	...	...	...	...	.....	137	110
Kansas	23	14	...	9	6,750	925	631
Kentucky	...	...	...	...	.....	111	117
Louisiana	18	5	3	10	3,815	508	514
Michigan	13	7	4	2	11,830	342	325
Mississippi	...	...	...	...	.....	14	24
Montana	11	9	...	2	720	108	106
New Mexico	7	7	...	...	22,765	189	72
New York	...	...	...	...	.....	...	4
Ohio	29	6	12	11	73	970	648
Oklahoma	49	27	3	19	58,675	1,578	1,282
Pennsylvania	3	1	1	1	4	85	216
Texas	236	164	5	67	297,655	8,234	6,584
Utah	...	...	...	...	.....	1	3
West Virginia	10	...	7	3	.....	322	239
Wyoming	...	...	...	...	.....	46	33
Total this week	413	251	36	126	415,667	14,253	11,343
Total last week	513	282	86	45	508,420	...	...
Total this year	14,253	9,354	1,214	3,600	28,997,475	...	...

PRODUCTION HIGHER

California is primarily responsible for gain

CRUDE oil production in the United States for the week ending September 7 was 35,625 barrels per day higher than in the previous week. This increase represented only a little over one percent, and was due almost entirely to the gain recorded in California. Texas and Louisiana also gained some, but Oklahoma and Kansas showed a noticeable drop. The output for the week averaged 2,656,050 barrels per day.

California Up 11 Percent

California production increased from 557,000 barrels per day to 616,000 barrels, a gain of almost 11 percent for the week just passed, although curtailment efforts are under way, to meet the depressed price situation on the West Coast. This rise recorded for the first week of September, is not, however, greatly out of line with the normal trend of production there, since allowables under proration are usually drawn on quite heavily in the early part of the month and curtailed in the latter part.

Texas production averaged 1,025,600 barrels daily, to record a gain of 3800 barrels over the daily average of the previous week. The increased daily allowable announced by the Texas Railroad Commission has not yet had time to materially influence the increase in production anticipated for the coming week. This did not keep the hot oil production from gaining, however, this output now being estimated at 50,000 barrels daily.

Oklahoma Declines

Production in Oklahoma, especially in the Oklahoma City and Seminole areas, showed a decided decline, dropping some 22,175 barrels daily from that of the previous week. This represented a decline of almost five percent.

Production in Louisiana showed an increase of around 3000 barrels per day, the coastal section being responsible for most of the gain. The state produced an average of 144,200 barrels daily, as against 141,200 barrels the previous week.

Production in New Mexico gained 3900 barrels per day while the other Rocky Mountain States together showed a slight increase of 800 barrels, or a little over one percent, Montana being largely responsible for this gain.

Eastern States remained unchanged and Michigan recorded a gain of about 1000 barrels daily over the production of the previous week.

TANK CARS SOLD

New York. — It was reported here August 31 that The Texas Company had sold its tank cars to the General American Transportation Corporation, and that the oil concern had entered into a long term contract with the transportation company covering leases for its tank car requirements.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	BARRELS DAILY FOR WEEK ENDING September 7	August 31
TEXAS—		
Texas Panhandle	54,000	58,100
North Texas	58,400	57,200
West Central Texas	25,900	25,900
West Texas	15,200	15,100
East Central Texas	47,700	46,800
*East Texas Field	440,700	439,200
†South Texas	59,200	58,100
†Texas Gulf Coast	188,500	186,400
*Total Texas	1,025,600	1,021,800
OKLAHOMA—		
Oklahoma City	116,775	127,750
Seminole Area	115,700	122,100
Tatums	4,500	4,575
Lucien	9,750	9,425
Fitts	14,950	16,300
Edmond	2,550	3,225
Others	185,300	188,325
Total Oklahoma	449,525	471,700
KANSAS—		
Ritz-Canton	8,650	7,650
Voshell	3,375	3,900
Nikkel-Hollow	7,025	6,625
Sedgwick	7,750	7,875
Burrton-Haury	14,350	15,200
Lorraine	3,150	7,250
Others	84,525	91,250
Total Kansas	128,825	139,750
LOUISIANA—		
North Louisiana	23,600	23,100
Louisiana Gulf Coast	120,600	118,100
Total Louisiana	144,200	141,200
ARKANSAS	29,400	32,175
CALIFORNIA—		
Long Beach	77,500	77,500
Santa Fe Springs	52,000	48,000
Huntington Beach	43,000	42,000
Doninguez	23,000	22,500
Inglewood	13,000	14,500
Ventura Avenue	34,000	34,000
Seal Beach	7,000	5,500
Midway-Sunset	57,500	54,500
Elwood	12,000	12,000
Kettleman Hills	79,000	78,000
Mountain View	30,000	37,000
Playa del Rey	16,500	16,500
Others	171,500	153,000
Total California	616,000	557,000
MOUNTAIN STATES—		
Wyoming	38,000	38,500
Montana	12,700	11,800
Colorado	4,800	4,400
Total Rocky Mountain States	55,500	54,700
NEW MEXICO	57,000	53,100
EASTERN STATES	102,500	102,500
MICHIGAN	47,500	46,500
*Total United States	2,656,050	2,620,425
*Surreptitiously produced oil in East Texas, not included in above figures, estimated at	50,000	45,000
Grand Total, including surreptitious production	2,706,050	2,665,425

† Coastal District of South Texas is included with Texas Gulf Coast.

Supply and Demand of All Oils in 1934, by Months

From Bureau of Mines Final Summary on Petroleum for 1934

(Including wax, coke, and asphalt in thousands of barrels of 42 gallons)

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1934	1933
New Supply:														
Domestic production:														
Crude petroleum	72,017	65,383	75,426	75,645	79,966	79,636	81,339	79,105	75,759	76,593	72,399	74,797	908,065	905,656
Daily average	2,323	2,335	2,433	2,522	2,580	2,655	2,624	2,552	2,525	2,471	2,413	2,413	2,488	2,481
Natural gasoline	3,057	2,826	3,049	2,950	2,938	2,864	2,971	3,057	3,074	3,267	3,240	3,263	36,556	33,810
Benzol	138	141	170	163	184	171	130	123	116	120	121	131	1,708	1,368
Total production	75,212	68,350	78,645	78,758	83,088	82,671	84,440	82,285	78,949	79,980	75,760	78,191	946,329	940,834
Daily average	2,426	2,441	2,537	2,625	2,680	2,756	2,724	2,654	2,632	2,580	2,525	2,522	2,593	2,578
Imports:														
Crude petroleum	2,800	3,031	2,410	2,845	3,012	3,787	3,001	2,746	2,928	2,884	2,915	3,199	35,558	31,893
Refined products	1,186	648	1,104	1,239	1,412	1,214	1,684	1,134	1,252	1,346	1,029	1,688	14,936	13,501
Total new supply, all oils	79,198	72,029	82,159	82,842	87,512	87,672	89,125	86,165	83,129	84,210	79,704	83,078	996,823	986,228
Daily average	2,555	2,572	2,650	2,761	2,823	2,922	2,875	2,780	2,771	2,716	2,657	2,680	2,731	2,702
Decrease in stocks, all oils	4,503	4,189	3,693	200	1,954	[1]2,767	[1]3,964	4,132	2,349	7,195	10,473	5,891	37,848	[1]11,013
Demand:														
Total demand	83,701	76,218	85,852	83,042	89,466	84,905	85,161	90,297	85,478	91,405	90,177	88,969	1,034,671	975,215
Daily average	2,700	2,722	2,769	2,768	2,886	2,830	2,747	2,913	2,849	2,949	3,006	2,870	2,835	2,672
Exports:														
Crude petroleum	2,288	2,511	2,582	3,942	3,724	3,794	4,128	3,696	4,068	3,277	4,680	2,437	41,127	36,584
Refined products	5,284	5,426	6,768	7,669	5,912	6,058	6,146	5,947	5,929	5,959	6,138	6,144	73,380	70,143
Domestic demand:														
Motor fuel	29,489	25,310	30,577	32,736	38,071	36,430	37,466	39,105	34,669	37,674	34,998	30,581	407,106	377,003
Kerosene	4,246	4,154	4,219	3,655	3,227	2,373	2,816	2,803	3,572	3,957	4,451	4,761	44,234	38,493
Gas oil and fuel oil	32,682	29,637	32,279	25,448	26,808	23,476	21,451	24,595	24,747	27,988	29,284	33,594	331,989	316,344
Lubricants	1,507	1,300	1,641	1,646	1,940	1,569	1,491	1,494	1,338	1,674	1,493	1,391	18,484	17,152
Wax	90	83	79	83	78	87	52	53	56	75	61	60	857	1,263
Coke	1,057	805	736	520	524	563	481	552	487	629	511	675	7,540	9,962
Asphalt	443	508	562	1,096	1,367	1,681	1,534	1,817	1,671	1,591	1,065	589	13,924	11,808
Road oil	97	107	264	176	553	1,113	1,171	1,288	772	507	201	129	6,378	5,266
Still gas (production)	3,457	3,050	3,429	3,642	3,674	3,707	4,150	4,240	3,835	3,792	3,625	3,790	44,391	45,212
Miscellaneous	42	147	198	207	204	220	181	214	168	126	200	219	2,126	1,464
Losses and crude as fuel	3,019	3,180	2,518	2,222	3,384	3,834	4,094	4,493	4,166	4,156	3,470	4,599	43,135	44,521
Total domestic demand	76,129	68,281	76,502	71,431	79,830	75,053	74,887	80,654	75,481	82,169	79,359	80,388	920,164	868,488
Daily average	2,456	2,439	2,468	2,381	2,575	2,502	2,416	2,602	2,516	2,651	2,645	2,593	2,521	2,379
Stocks:														
Crude petroleum	353,642	351,641	354,067	354,350	355,883	357,451	355,525	351,092	349,407	346,800	341,403	337,254	337,254	[2]354,223
Natural gasoline	3,893	3,776	3,916	4,259	4,411	4,566	4,551	4,790	4,611	4,255	3,714	3,740	3,740	[2]3,680
Refined products	240,160	238,089	231,830	231,004	227,365	228,409	234,314	234,376	233,891	229,659	225,124	223,356	223,356	[2]244,295
Total stocks, all oils	597,695	593,506	589,813	589,613	587,659	590,426	594,390	590,258	587,909	580,714	570,241	564,350	564,350	[2]602,198

[1]Increase. [2]On new basis—for comparison with 1934.

Final 1934 Figures

BUREAU OF MINES REPORT SHOWS INDUSTRY IMPROVED

VARIOUS favorable factors were revealed, regarding the oil industry during 1934, in the final summary of operations for the year, lately released by the Bureau of Mines. The report showed, for instance, that the total demand for oils was substantially greater than in 1933 having exceeded a billion barrels. In the face of the greater consumption, crude oil production was rigidly restricted, amounting to only a little more than in 1933, and therefore permitting a substantial reduction of above-ground stocks. The stock reduction, of course, represented a favorable factor. By virtue of the close conformity of supply with demand, markets were stimulated and prices were better than in 1933.

Gasoline demand was particularly high, rising to a new record. The demand was greater also for most of the other petroleum products, including kerosene, gas oil and fuel oil, lubricants, wax, and coke. Slightly lower demand existed for asphalt and road oil.

Although crude runs to stills increased from 861,254,000 barrels in 1933 to 895,636,000 barrels in 1934, the gain was largely justified by increased demand. The yield of gasoline declined from 43.7 percent in 1933 to 43.4 percent in 1934, indicating that the supply of refinery crude was generally ample, despite the program of refinery control, under which runs to stills were made to conform with requirements.

Motor fuel stocks declined from 59,935,000 barrels on January 1 to 51,945,000 barrels on December 31, partially as a result of a new record for motor fuel demand. The domestic demand for motor fuel was 407,106,000 barrels, or eight percent higher than in 1933, being the highest on record. The 29,321,000 barrels exported in 1933 declined to 24,686,000 barrels in 1934.

Other major refined products, with the exception of wax, reflected an increase in 1934 over 1933. The domestic demand for lubricants and fuel oil stayed in line with the greater industrial activity and consumption of gasoline. Although a heavy drain on fuel oil stocks was made, the only decline was noted in California, with stocks increasing considerably elsewhere.

Crude oil stocks, however, decreased in 1934, an opposite trend to that of 1933. The first half of 1934 followed the trend of 1933 and showed an increase, but the decrease during the last half was so pronounced that a drop of 17,000,000 barrels was recorded from January 1 to December 31.

Crude oil production in 1934 approached the pre-depression years. A total of 908,065,000 barrels was recorded, being second to the billion barrel year of 1929.

[*Continued on page 66*]

Comparison of Permits Granted for New Wells

STATE	Week Ending Aug. 31	Total this Mo.	Total this Year	Total this Date Last Year	1934 Year Total
Arkansas	2	9	34	46	100
California	18	92	635	361	629
Louisiana	22	74	574	584	799
Kansas	15	143	733	647	1,015
Michigan	16	64	415	322	460
Oklahoma	58	193	1,489	1,381	2,045
Texas	344	1,109	7,808	7,139	10,550
Total	475	1,684	11,688	10,480	15,598

CRUDE OIL PRICE QUOTATIONS

(Figures Represent Basic or Flat Prices—Revised to September 6, 1935)

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Oklahoma-Kansas	28—$ .84	2¢	40—$1.08	9-29-33
N. and N.-C. Texas	28— .79	2¢	40— 1.03	9-29-33
Texas Panhandle				
Gray County	34— .79	2¢	40— .91	9-29-33
Carson-Hutchinson	34— .69	2¢	40— .81	9-29-33
West Texas				
Ector, Pecos, Wk'lr	*.75			9-29-33
Crane, Upton, Howard and Glasscock	*.70			9-29-33
East Texas	*1.00			9-29-33
Texas Gulf Coast				
Anahuac-Dickinson	30— .94	2¢	40— 1.14	8-20-35
Conroe	35— 1.09	2¢	40— 1.19	9-29-33
Tomball	*1.15			9-29-33
Cleveland	*1.00			1-11-34
†Goose Creek, Hull Liberty, Orange, Pierce Junction, Moss Bluff, Raccoon Bend, Sour Lake, Spindletop, Sugarland, West Columbia, Humble, Rabbs Ridge	Below 20— .82	2¢	34— 1.12	9-29-33
South and S.W. Texas	Below			
Refugio (Light)	20— .92	2¢	34— 1.12	9-29-33
Refugio (Heavy)	*.80			6-29-35
Saxet	*.80			6-29-35
Mirando	*.75			6-29-35
Pettus	*1.05			9-29-33
Salt Flat	*.87			9-29-33
Darst Creek	*.87			9-29-33
Port Lavaca	*.97			
Arkansas				
El Dorado (Light) and Rainbow	29— .79	2¢	40— 1.03	3-17-34
El Dorado East Field and Smackover	*.70			9-29-33
North Louisiana	29— .79	2¢	40— 1.08	9-29-33
Urania	*.85–*.87			1- 1-34

*All gravities—flat rate.
†Gulf Coast prices as posted by Humble Oil & Refining Company.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
South Louisiana				
Lockport	Below 20— .80	2¢	34— 1.10	9-29-33
Iowa, Cameron Mds.	Below 20— .70	2¢	34— 1.00	9-29-33
Rocky Mountain States				
Salt Creek	29—$ .84	2¢	40—$1.08	9-29-33
Elk Basin	*1.17			9-29-33
Grass Creek (Light)	*1.17			9-29-33
Big Muddy	*1.01			9-29-33
Rock Creek	*1.02			9-29-33
Sunburst	*1.20			7-19-35
Lance Creek	*1.02			8-25-33
Osage	*.62			8-25-33
Cat Creek	*1.07			8-25-33
Cut Bank	*1.45			9-29-33
Pondera	*1.05			9-29-33
Hog Back, N.M.	*1.00			9- 8-33
Lea County, N.M.	*.75			9-29-33
Mid-West States				
Lima	*1.15			2- 1-35
Illinois	*1.13			1- 5-34
Princeton	*1.13			1- 5-34
Western Kentucky	*1.13			5-22-35
Pennsylvania				
Bradford	*1.95			7-16-35
Sw. Pa. Pipe Line	*1.67			7-16-35
Eureka Pipe Line	*1.62			7-16-35
Buckeye Pipe Line	*1.52			7-16-35
Corning Grade	*1.32			10- 2-33
Michigan				
Central Michigan	*1.20			9-30-33
Muskegon	*.70–1.00			12-31-32
Canada				
Petrolia	*2.10			9- 9-33
Oil Springs	*2.17			9- 9-33

*All gravities—flat rate.

MAJOR PRICE CHANGES

	Penna (Nat. Tr.)	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
March 5, 1933	.....	.....	Cut 24
May 2, 1933	.....	Cut 19	.....
May 9, 1933	Cut 20	.....	.....
May 22, 1933	Up 10	.....	.....
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
August 11, 1933	Up 10	.....	.....
August 24, 1933	.....	Up 10	.....
August 30, 1933	Up 15	.....	.....
September 6, 1933	Up 10	Up 10	Up 15
September 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
November 6, 1934	Cut 25	.....	.....
December 6, 1934	Cut 25	.....	.....
January 4, 1935	Up 15	.....	.....
February 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
August 29, 1935	.....	.....	Revised

CRUDE PRODUCTION TAXES

Oklahoma—Five percent of gross value less royalty interest.

Texas—Two cents or 2 percent, whichever is higher.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Two percent of gross value at well and 3/5 of 1c per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

*All gravities—flat rate.

CALIFORNIA

(All gravities above those quoted take lowest price offered in that field)
Effective August 29, 1935

Gravity	Signal Hill	Seal Beach Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey[1]	Olinda-Brea Canyon	Athens Rosecrans Dominguez	Elwood Terrace[2]	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Mountain View	Midway Sunset Elk Hills Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	.....	.....	$.65	$.65	$.65	$.65	$.65	.....	$.57	$.57	$.57	$.57	$.57	$.57
15-15.9	.65	.65	.63	.63	.61	.63	.....	.....	.63	.63	.63	.63	.63	.....	.57	.57	.57	.57	.57	.57
16-16.9	.63	.63	.61	.61	.58	.61	.....	.....	.61	.61	.61	.61	.61	.....	.57	.57	.57	.57	.57	.57
17-17.9	.61	.61	.59	.59	.55	.59	.....	.....	.59	.59	.59	.59	.60	.....	.57	.57	.57	.57	.57	.57
18-18.9	.60	.60	.57	.57	.52	.57	.....	.....	.58	.57	.57	.58	.59	.....	.57	.57	.57	.57	.57	.57
19-19.9	.58	.58	.55	.56	.49	.56	.....	.....	.57	.56	.55	.57	.58	.....	.57	.57	.57	.57	.56	.56
20-20.9	.57	.57	.53	.55	.46	.55	.....	.....	.56	.55	.54	.56	.57	.....	.....	.57	.57	.57	.55	.55
21-21.9	.56	.56	.52	.54	.43	.54	.....	.....	.55	.54	.53	.55	.56	$.57	.....	.56	.56	.56	.54	.54
22-22.9	.55	.55	.51	.53	.40	.53	.....	.....	.54	.53	.52	.54	.55	.56	.....	.56	.56	.56	.53	.53
23-23.9	.54	.54	.50	.52	.39	.52	$.55	.....	.53	.52	.51	.53	.54	.55	.....	.55	.55	.55	.52	.52
24-24.9	.53	.53	.49	.51	.38	.51	.54	.....	.52	.51	.50	.52	.53	.54	.....	.54	.55	.54	.51	.51
25-25.9	.52	.52	.48	.50	.37	.50	.53	.....	.51	.50	.....	.51	.52	.54	.....	.53	.54	.54	.50	.50
26-26.9	.51	.51	.47	.49	.36	.49	.52	.....	.50	.49	.....	.50	.51	.53	.....	.52	.53	.53	.....	.....
27-27.9	.50	.50	.46	.48	...	.48	.51	.....	.....	.48	.....	.....	.50	.52	.....	.51	.52	.53	.....	.....
28-28.9	.49	.49	.45	.47	...	.47	.50	.....	.....	.47	.....	.....	.49	.51	.....	.50	.51	.52	.....	.....
29-29.9	.48	.48	.44	.46	...	.....	.48	.....	.....	.46	.....	.....	.48	.50	.....	.49	.50	.51	.....	.....
30-30.9	.47	.47	.43	.45	...	.....	.46	.....	.....	.....	.....	.....	.47	.49	.....	.48	.49	.50	.....	.....
31-31.9	.46	.....	...	.44	...	.....	.45	.....	.....	Kettleman Hills			.46	.48	.....	.47	.48	.....	.....	.....
32-32.9	..	.....	...	.43	...	.....	.44	.....	.....				.45	.47	.....	.46	.47	.....	.....	.....
33-33.9	...	.....	...	...	...	.....	.....	$.50	.....	.....	$.62	.....	.44	.46	.....	.45	.46	.....	.....	.....
34-34.9	...	.....	...	...	...	.....	.....	.49	.....	.....	.61	.....	.43	.45	.....	.....	.....	.....	.....	.....
35-35.9	...	.....	...	...	...	.....	.....	.48	.....	.....	.60	.....	.....	.44	.....	.....	.....	.....	.....	.....
36-36.9	...	.....	...	...	...	.....	.....	.47	.....	.....	.59	.....	.....	.43	.....	.....	.....	.....	.....	.....
37-37.9	...	.....	...	...	...	.....	.....	.46	.....	.....	.58	.....	.....	.42	.....	.....	.....	.....	.....	.....
38-38.9	...	.....	...	...	...	.....	.....	.....	.....	.....	.57	.....	.....	.41	.....	.....	.....	.....	.....	.....
39-39.9	...	.....	...	...	...	.....	.....	.....	.....	.....	.56	.....	.....	.....	.....	.....	.....	.....	.....	.....

[1] Subject to Field Gathering Charge of 5 cents per barrel.

[2] F.O.B. Ship.

Pipe Line Activity

NEW PROJECTS— CONSTRUCTION PROGRESS

PROPOSE GAS LINES

In South Texas that may total 200 miles or more

Corpus Christi, Texas.—Gas purchase contracts in South Texas, if completed, will bring about the construction of several new pipe lines with a total length of more than 200 miles. In addition, there will be constructed feeder lines from the main trunk system.

The deals, still in their early stages, are supposed to require in the neighborhood of 75,000,000 to 100,000,000 cubic feet of gas per day, the purpose being for both domestic and commercial uses.

The most outstanding deal involves the construction of a pipe line from the Pettus district, in Live Oak and Bee Counties, to the City of Austin. Just how the system will be routed is not known, but it is said that preliminary negotiations are now underway to include San Antonio in the deal. This undoubtedly would mean the building of the line to San Antonio, thence to Austin, a distance of about 150 miles.

As outlined, the line also would serve a number of the smaller towns and industrial outlets in the general area.

The deal would be financed through a Progress Works Administration loan and grant, which would involve probably several million dollars. The application for the loan likely will follow the completion of engineering survey, gas reserve, etc.

A Second Deal

The second deal, still rather vague, is a private affair, being financed, it is understood through private capital from an Eastern concern. This deal, which calls for the use of possibly 30,000,000 cubic feet of gas per day, is still too young to have any definite details. Representatives of the concern, however, are in South Texas at this time to complete a deal for the purchasing of sufficient gas to supply the line.

Southwest Gas Company recently announced plans for the construction of a pipe line from the Fordtron field in northern Victoria County to the Yoakum area, a distance of some 20 miles.

MICHIGAN OIL LINE

Mt. Pleasant.—Walter L. McClanahan, head of McClanahan Oil Company and McClanahan Refining Company has announced organization of McClanahan Pipe Line Company. The pipe line division has started construction of a 20-mile four-inch line from the Crystal-Ferris field to St. Louis, Michigan, where the McClanahan refinery is located.

300-Mile Gas Line

[*Continued from page 12*]

been reported on the proposal for the state-federal line from the Texas Panhandle to Detroit. It has been indicated the Texas legislature, in special session September 16, may consider bringing that state into such a project. But from Washington recently came indication that the Texas plan has not been acted upon definitely at an early enough time to be aided by PWA funds, as contemplated by the Texas political sponsors of the project.

TWO KANSAS LINES

planned will give needed outlet for western fields

Wichita. — Construction work is scheduled to begin immediately on two separate pipe line projects which together will provide much-needed market outlet for various oil fields of western Kansas. Initially, the lines probably will not be called on to handle more than about 10,000 barrels daily. But to make allowance for future expansion of producing operations, the outlets will be designed for handling as much as 20,000 barrels of crude daily.

Valley Center, Kansas, north of Wichita, is an important converging point of existing systems. From there, Socony-Vacuum Corporation, White Eagle Division, will build 75 miles of eight-inch line, to a main pump station, to be built near Chase, Rice County, Kansas. Preliminary work on that unit has been finished, and construction will begin at once.

Meanwhile, surveys and other preliminary activities are under way, and construction work will be started immediately, on a separate eight-inch pipe line unit, running from Chase northwesterly about 45 miles to a point in Russell County, Kansas. From that point there will be branches to most of the producing pools in Russell, Rice, Barton, Ellsworth, and Ellis Counties. This line running northwesterly from Chase will be a joint project of The Texas Company, Empire Gas & Fuel Company, and Phillips Petroleum Company. For building and operating the unit, a new company will be formed, probably to be known as The Texas-Empire Pipe Line Company of Kansas.

There will be no connection, as regards ownership, between the White Eagle pipe line project and the Texas-Empire-Phillips unit. But the two units together will afford a continuous, direct market outlet for the western Kansas fields.

COMPLETING LINE

From Samfordyce field to Port Isabel

Brownsville, Texas.—Work will be completed shortly on the Valley Pipe Line Company's 85-mile deep water outlet for the Samfordyce field, Hidalgo County. It will have for its terminus the new Port Isabel waterway.

Working 24 hours daily, ditching machines are now at the western edge of the Progreso water district, south of Weslaco, and are about two miles ahead of the pipe-stringing crews and painting crews. The latter in turn are about one mile ahead of the pipe-laying crews and construction, directed by Oscar Freddell of Freddell Construction Company of Denver and Houston, is proceeding rapidly.

Electric welding crews of Wyatt Metal and Boiler Works of Dallas have completed a 55,000-barrel steel storage tank at Samfordyce to handle the pipe-line company's purchased crude. The tank was the second of a battery to be built in the field, the first unit being a 20,000-barrel tank, and crude is now being stored in both.

Meanwhile, the Wyatt crews have started work at Port Isabel on two 55,000-barrel loading storage tanks for Port Isabel Terminal Company, which will supply bunker oil for ships docking at the port.

A site is being cleared and forms are being prepared for construction of the Valley Port Refining Company's new 5000-barrel refinery at Port Isabel and work will start within the next two weeks.

START WYOMING LINE

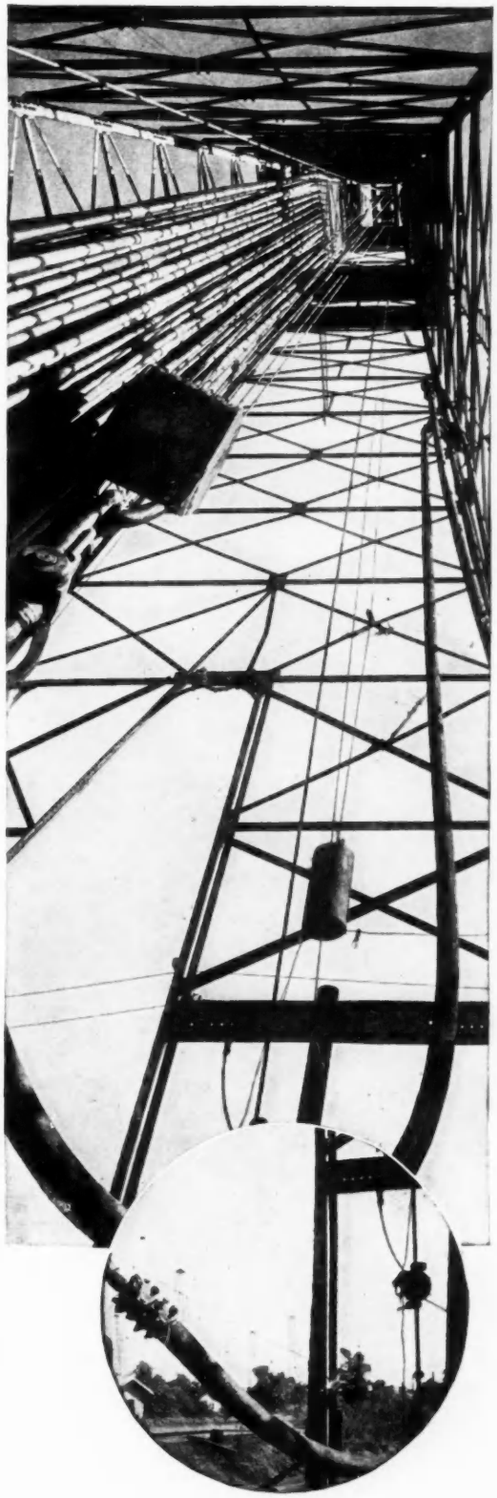
Plan 217-mile project operation by January 1

Casper, Wyo.—Order for pipe for North Central Gas Company's line from Clayton, Wyoming, to Lewellen, Nebraska, has been placed with American Pipe & Supply Company. The order, amounting to $1,000,000, calls for 65 miles of 12¾-inch pipe; 56 miles of 10-inch; nine miles of eight-inch; 18 miles of six-inch; 14 miles of four-inch, and 55 miles of three-inch.

With the exception of the last 55

A *Product of the Most* INTIMATE
Knowledge of Oil Industry Needs

US MATCHLESS
HIGH PRESSURE ROTARY HOSE



Over 80,000 feet of deep well drilling in Oklahoma where pressures are very severe! But one example of the exceptionally long service records established by "U. S." Matchless High Pressure Rotary Hose in the tough Mid-Continent Oil Fields—made possible only by the unified efforts of "U. S." oil field specialists and its manufacturing organization who jointly watch service conditions, develop improved compounds and constructions.

The unique construction of "U. S." Matchless High Pressure Rotary Hose—the exceptional uniformity of tension of duck, rubber and wire, plus the scientific knowledge of the ANGLES at which they are laid up and built—assuring longest possible life and unfailing dependability—are made possible only by the very elaborate testing Laboratories of "U. S."

The wall structure of "Matchless" is made up of a tough inner tube, specially compounded of abrasion-resisting rubber, multiple plies of strong duck, strengthened with *three ("U. S." was first to use three)* distinct spirals of flat braided wire, cushioned in rubber to prevent shearing. The cover of the hose is a special rubber stock which withstands severest punishment.

"U. S." Matchless is, and has been for years, the most widely used rotary hose in the Mid-Continent and other deep well fields, and there are many sound reasons for this universal popularity which you can learn about by contacting "U. S." Oil Industry Branches at Kansas City, Mo., Tulsa, Okla., Dallas and Houston, Texas, Los Angeles, Cal., and other points.

UNITED STATES RUBBER COMPANY — US — TRADE MARK

A complete and detailed catalog of "U. S." Mechanical Rubber Goods for the Oil Industry will be found in the "COMPOSITE CATALOG OF OIL FIELD AND PIPE LINE EQUIPMENT."

United States Rubber Company

United States Rubber Products, Inc., 1790 Broadway, New York, N. Y.

CONVENIENT . . .
ACCURATE . . .
DEPENDABLE . . .

KEROTEST

Adjustable Control Chokes

Built of heat treated steel drop forgings . . . designed for most severe service . . . tested to 6000 lbs. . . . calibrations read to the nearest 64th opening.

Kerotest Control Chokes are extremely accurate in determining best rates of production, as well as determining the proper size positive choke for exact flow control.

When flowing "with the needle" on high pressure gas wells, they will reduce freezing in your lines very much under ordinary conditions.

When flowing against the needle the flared discharge is operative.

KEROTEST Chokes are made in both BOLTED BONNET AND SCREWED BONNET TYPES . . . also with ALL MALE CONNECTIONS, OR ALL FEMALE CONNECTIONS, or with COMBINATIONS OF BOTH.

The Type 2043, Size 3" illustrated above is the standard all male design, and has a hub regularly machined on the back side for attachment of clamps.

Ask your nearest supply dealer for copy of KEROTEST BULLETIN 115 describing this complete line.

KEROTEST

Kerotest Manufacturing Co.
Pittsburgh, Pa., U. S. A.

miles, the pipe is reconditioned and has been gathered from several old lines taken up in recent years in the state.

American Pipe & Supply Company, through its subsidiary, American Iron & Metal Company, delivered the first order of 12-inch pipe to the contracting company, Williams Brothers, Inc., of Tulsa, who are reconditioning the pipe and stringing it along the right-of-way between Clayton and Douglas. The construction company has ditching machine in operation and is starting welding operations. Couplings will be used along some sections of the line, while the major part will be welded.

The line will have a total length of 217 miles and the construction company expects to have it ready for operation by January 1. It became necessary to lay the line when Stanolind Oil & Gas Company last fall served notice that it would not renew lease on the section of its gravity flow oil line from Teapot, Wyoming, to Freeman, Kansas. The utilities company has been using the section of the line since 1930 to transport gas to towns in eastern Wyoming and western Nebraska.

Stanolind Pipe Line Company will recondition the oil line and start running crude oil to Standard Oil Company (Indiana) refineries. High taxes in Converse County assessed against the 22,000,000 barrels of stored crude at Clayton made it no longer economical for the company to hold this reserve, officials said when questioned for reason for moving the crude.

GOOD PROGRESS

Being made on Cayuga to Dallas gas line

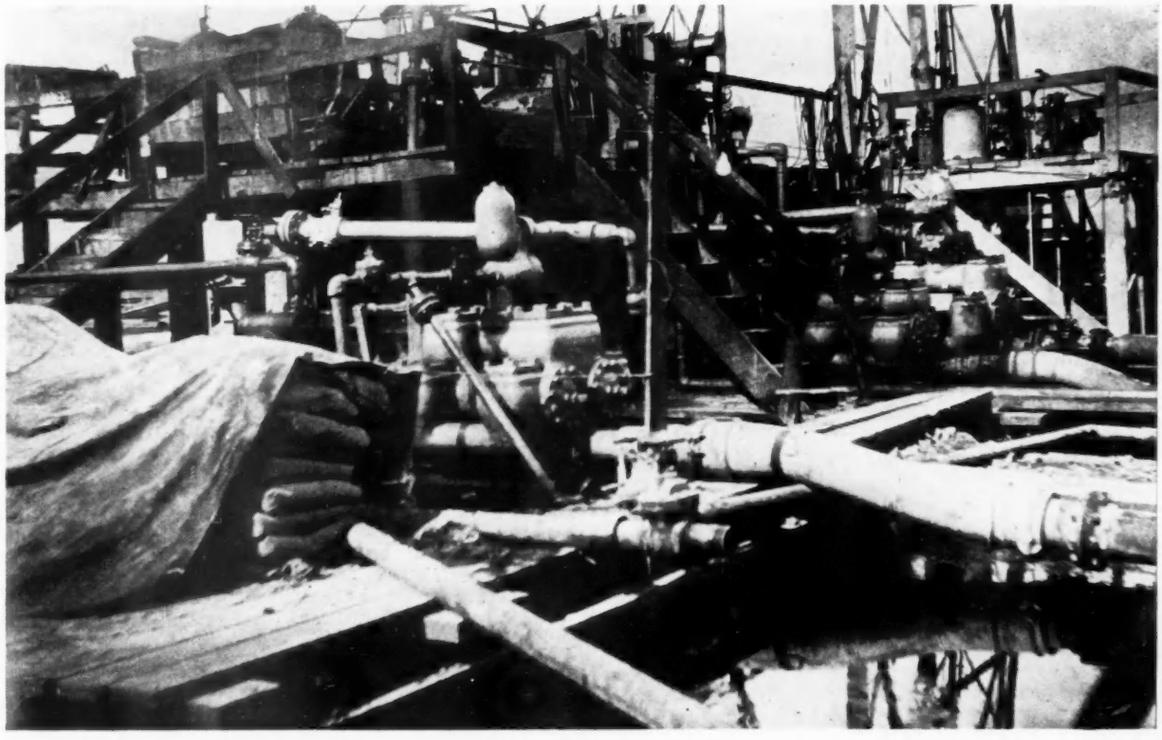
Dallas, Texas. — Construction work on the Lone Star Gas Company's 108-mile 20-inch natural gas trunk line, extending from Irving Junction, situated between Dallas and Fort Worth, to the Cayuga and Long Lake fields, Anderson County, is ahead of the original schedule as result of the two contractors engaged on the project having been favored with dry weather. About 50 percent of the line has been welded, while more than 26 miles has been tested and buried. It is scheduled to be in operation by November 1.

Lone Star Gas Company has contracted for gas in the Cayuga and Long Lake fields for periods ranging up to 20 years, and upon the completion of the new line will be able to deliver gas into the Dallas-Fort Worth marketing territory without the aid of booster stations. Gas wells in the two fields have a maximum rock pressure of 2200 pounds. The new line will tie into the company's 12-inch unit that has been delivering gas from the Long Lake area into its South Texas system below Waco since last December, thus affording a dual outlet from the latter field.

A lateral line, consisting of about 3½ miles of eight-inch pipe, is being built by the company from its Long Lake-Waco system to the Red Lake gas field, southeastern Freestone County, as result of contract having been made to purchase gas from J. B. Daniel, et al.

Another deep one for

WILSON-SNYDER PUMPS



Drilling to record depths is getting to be a habit with Wilson-Snyder pumps. These two are on a Louisiana Gulf Coast Well now drilling below 10,500 feet. The pump in the foreground is an auxiliary—the one in the rear is doing ALL the work.

Wilson-Snyder's reputation for dependable, economical, fast drilling has won them a pre-eminent position among experienced operators on the Gulf Coast.

WILSON-SNYDER PUMPS ARE DISTRIBUTED EXCLUSIVELY ON THE GULF COAST BY

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OIL and GAS WELL SUPPLIES

Also Exclusive Gulf Coast Distributors for
American Cable Tru-Lay *Pre-formed* Wire Rope; Kewanee Boilers; Sievers Reamer; Driftmeter, Jr.

BRANCHES
Barbers Hill, Kilgore, Gretn, Gladewater, Port Lavaca and Tomball, Texas; Lake Charles and Shreveport, Louisiana.

Edited by
WM. V. GROSS, Associate Editor

Cancel Ethiopia Deal

AMERICAN CONCERNS WITHDRAW AFTER OBTAINING CONCESSION

NEW YORK.

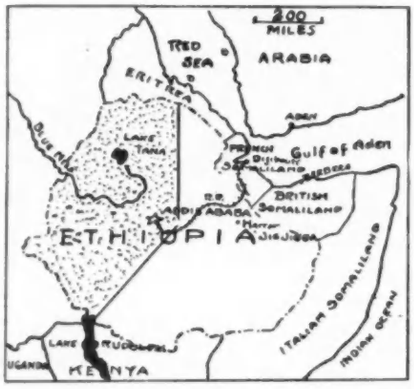
EXECUTIVES of the Standard Vacuum Oil Company, September 4, indicated to the United States government that they had authorized cancellation of the 75-year concession granted just before midnight, August 29, by Emperor Haile Selassie whereby mineral exploration and exploitation rights for the eastern half of Ethiopa were turned over to African Exploration and Development Company, a subsidiary.

This action abruptly removed the cause of the greatest amount, while it lasted, of "page one" newspaper copy devoted to the oil industry since the turbulent days of the "Teapot Dome" explosions.

Withdrawal from the deal with the Ethiopian emperor took place following a conference between Wallace Murray, chief of the Near East division of the United States department of state, and George S. Walden and H. Dundas, chairman of the board and vice president, respectively, of Standard Vacuum Oil Company, an organization jointly controlled by Standard Oil Company (New Jersey) and Socony-Vacuum Corporation.

Emperor Haile Selassie's move in granting the concession involving around 150,000 square miles was thought to be a gesture to delay, temporarily, Italiam Prime Minister Mussolini's plans of invading Ethiopia. The move of the department of state, of which Cordell Hull is secretary, to obtain a withdrawal of American corporate interests from the hot bed of European politics is considered by some diplomats as eliminating possible entanglement of the United States in the Italo-Ethiopian dispute.

While Walden and Dundas were given official recognition as those responsible for sacrificing the concession for the diplomatic benefit gained by the United States, an Associated Press dispatch from New York September 5 declares "The American," newspaper, stated the personal intervention of John D. Rockefeller, Jr., was really responsible for the action. Rockefeller offices refused to comment on "The American's" article.



Shaded area shows roughly portion of Ethiopia which was not involved in the concession obtained from Emperor Haile Selassie for African Exploration and Development Company. The unshaded portion was, according to the concession signed just before midnight of August 29, to be given to the above organization for mineral exploration and exploitation on a royalty basis.

Another Concession Granted

Another concession granted Leo Chertok, New York broker, presents a problem yet to be settled. September 4 he is quoted as stating he has received a 50-year concession for oil and minerals in Ethiopia as security for a million dollar loan to be raised by October 17. Later he was quoted as saying he was prepared to exercise his option on the concession and that money for the loan to the Ethiopian government would be forthcoming. This latter concession, of course, is of minor importance compared with the one cancelled.

Reverting back to the African Exploration and Development Company concession, Walden of Standard Vacuum Oil Company, declared the terms of the concession called for operation on a straight royalty basis and that the transaction did not involve a loan or any payment of money. The concession was negotiated as a matter of private business with the Ethiopian government and without consulting any other government, he is reputed to have declared.

Official Ethiopia, when informed of the withdrawal of American interests, appeared at loss to understand Standard Vacuum Oil Company's actions following recommendations of the United States department of state. The Ethiopian government reserved comment on the affair.

Cause of the beginning of negotiations for the concession was generated by Haile Selassie's opinion that there was little hope for diplomatic settlement of the Italo-Ethiopian dispute at Geneva, according to Francis M. Rickett, British promoter who negotiated the deal. Immediately after the emperor had been advised of the failure of peace negotiations at Paris, he summoned Rickett from Egypt and opened negotiations for the concession just five days prior to appending his signature to the finished document on August 29.

According to the concession, the initial investment to be made by African Exploration and Development Corporation would amount to $60,000,000. Territory involved may be roughly described as that part of the nation lying east of a line drawn due north to the Ethiopian border from a point situated about 75 miles east of Addis Ababa and another line drawn in a southwesterly direction from this same point to the northern end of Lake Rudolph, located mainly in Kenya. This territory includes two oil fields in Eastern Ethiopia, Aussa and Jigjigga, of which little is known, although the former is reported to have been offered to Italy at one time.

The initial expenditure of $60,000,000 by the concessionaire was to have been devoted to roads, radio stations available at all times to the government, community dwellings for European and native workers. According to information originating in Addis Ababa, the concessionaire agreed to lay a 300-mile pipe line from somewhere in the neigh-

Reduces "MAKE-UP" and "BREAK-OUT" Time

THE IDEAL MB-20½" ROTARY

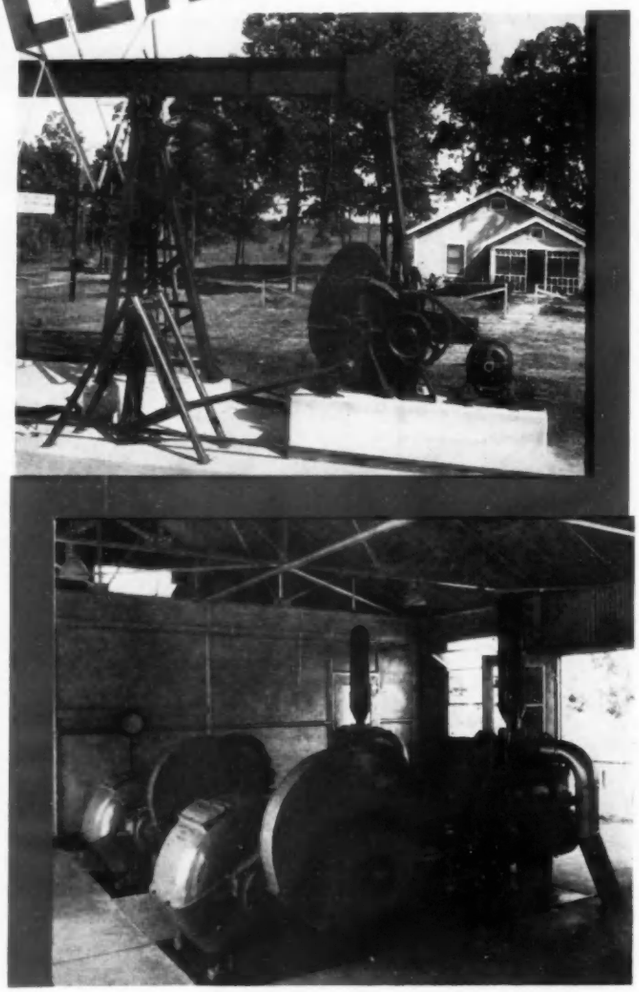
"Reg. U. S. Pat. Off."

. . An outstanding departure in the design of "Make-and-Break" Rotaries. It is a heavy, all-steel, fully enclosed unit, developed to withstand the severe shocks of deep drilling, being rated for depths up to 12,000 feet. It incorporates features which make it extremely smooth and true-running . . . safer, faster and more economical in operation. Time required to make up and break out drill pipe and casing with this machine is far less than with an ordinary rotary. During fishing operations, the breaking out of joints is done without rotating the string in the hole.

Bulletin No. 78 sent on request

THE NATIONAL SUPPLY COMPANY

Electric Power Is CLEAN POWER



There is an old saying that Cleanliness is next to Godliness.

However that may be, there is certainly a very close business alliance between Cleanliness and Efficiency.

Many oil men assume—and correctly so—that neat, clean properties make for both economy and efficiency. Small wonder, then, that Electric Power is so often employed by experienced men in every branch of the petroleum industry.

Upper Photograph: Small electric motor handling three wells with pumping unit and back side crank.

Lower Photograph: 25 H.P. electric motors driving pipe line pumps. Economy and efficiency naturally go with neat, clean, smart set-ups like these.

SAVE WITH ELECTRIC POWER
PETROLEUM ELECTRIC POWER CLUB

PETROLEUM ELECTRIC POWER CLUB

borhood of Geludia to seaboard in British Somaliland via Jigjigga.

Rickett is quoted as saying, prior to cancellation of the concession, that American rights would certainly be recognized by Italy even if the Italo-Ethiopian war materialized. Mussolini had been previously quoted as declaring British rights would be respected. This was prior to news of the concession.

African Exploration and Development Company was chartered July 11, 1935, under the laws of Delaware. The charter describes the purpose of the corporation as being to explore for oil, precious stones, gold, silver, and asphalt. The capital stock was placed at 5000 shares of $100 each par value. Alfred W. Britten and Edward F. Williams were two of the incorporators. Headquarters of the corporation is in New York.

ITALY BUYS

Large interest in BODC according to reports

Trade commissioner E. Humes of Rome, Italy, states the A. G. I. P., government oil concern, is reported to have obtained a majority interest in British Oil Development Company, which holds important concessions in Iraq in the territory west of Tigris.

Nine wells have been put down by this organization in the Shargat district, and additional drilling machinery is being shipped in. It is stated that the company contemplates building a 12-inch pipe line to bring the crude oil to the Mediterranean at Alexandretta. If completed, the pipe line will be about 500 miles long.

EGYPT OUTLOOK

Completion of Egypt's new mineral oil law is waited with considerable eagerness by Anglo-Egyptian Oil Company officials and oil men interested in international development.

The production of Anglo-Egyptian Oil Company from Egyptian fields has been steadily declining for the last several years. Lack of new petroleum reservoirs in Egypt has caused considerable speculation as to whether Anglo-Egyptian Oil Company would continue to exist.

Negotiations were undertaken sometime ago between Anglo-Egyptian Oil Company and the Egyptian government to obtain for the former new concessions for exploration in Egypt. The Egyptian government deferred until laws relative to mineral concessions could be revised. Revision and issuance of the legislation is expected momentarily.

SPANISH FIELD

Several professors of the University of Madrid have collected for examination samples of crude oil from the recently discovered oil field in the province of Santander, near the town of San Mames. Engineers of the Spanish state will be in charge of exploitation of the field, the present known productive area of which is estimated at 180 acres.

TRET-O-LITE'S

Process Patented — Reg. U. S. Pat. Office

uniform rapid

action for treat-

ing crude oil

to pipe line

requirements

meets modern

production

demands • • •

TRETOLITE COMPANY

MANUFACTURING CHEMISTS

DALLAS **SAINT LOUIS** **LOS ANGELES**

Representatives in all Principal Fields

Final 1934 Figures

[*Continued from page 56*]

Imports of crude petroleum, including imports in bond, increased from 31,893,000 barrels in 1933 to 35,558,000 barrels in 1934. Imports of refined products, mostly fuel oil, also showed a small increase in 1934. Stocks of all oils, which had increased in 1933, declined in 1934, the total as of December 31, 1934, being 564,350,000 barrels, compared with 602,198,000 barrels on hand January 1. The daily average demand for all oils in 1934 was 2,835,000 barrels, of which 2,521,000 barrels, or 89 percent, represented domestic demand.

New records for crude oil production were established in Kansas, Michigan, and New Mexico. The coastal district of Louisiana showed a striking gain of about 50 percent in 1934 over 1933. Nevertheless, the three important oil producing states of Texas, Oklahoma and Arkansas showed declines in production. Texas had an output greater than Oklahoma and California combined, and easily held its rank as the leading oil producing state. The East Texas field yielded a daily average close to 500,00 barrels, which included an estimate of around 60,000 barrels daily of hot oil. Some new fields were discovered in Oklahoma, but they failed to offset the decline at Oklahoma City, and the state as a whole showed a lower production. Practically all other states reported gains in 1934.

Changes in crude oil prices were rare, resulting in a comparatively stabilized situation throughout 1934. Most of the changes were downward and they were recorded in the Eastern fields. Mid-Continent crude of 36-36.9 gravity remained mostly at $1.00 per barrel in Oklahoma, while the average per barrel throughout the nation was 99.6 cents, with a total value at the wells of $904,825,000, which was 49 percent higher than in 1933.

The favorable prices were reflected in increased drilling activity. There were 18,197 wells drilled in 1934, or nearly 50 percent more than in 1933. There were 333,070 producing oil wells in the country on December 31, 1934, an increase of 6220 for the year. Around 28 percent of the 18,197 oil wells completed in 1934 were in East Texas, while this section was credited with 30 percent in 1933. Dry holes were considerably more scarce, and 1373 gas wells were brought in, an increase of 47 percent over 1933. Around 6290 wells were abandoned or disconnected during 1934.

SIBERIA STUDY

Evaluation engineers are busy attempting to determine the importance of the recent discovery of oil in the region of Kuznetsk, in the western part of Siberia.

According to a report published by the Soviet government, study of the region has been placed in the hands of the Geological Trust of West Siberia by the Kemerovsky group, which has been in charge of exploration activities in that region.

Large Altus Well

FLOWING 25 BARRELS PER HOUR FROM 1514 FEET

WEEKLY STAFF REPORT

Ardmore.—Manson Oil Company's Minor 2, NE NE NE 15-1n-20w, in the new Altus pool six miles southeast of Altus in eastern Jackson County, topped the second granite wash at 1514 feet and started flowing at the rate of 25 barrels of oil per hour with a bit only a few inches in the producing horizon. This well is the largest of any of the completions in an area which has received considerable attention during the past several months. The play has been carried on largely by independent operators after Gypsy Oil Company discovered the producing horizon.

Eighteen miles southwest of Altus in the Pala Duro Basin area of southwestern Jackson County, Dengail Oil Company et al's Robinson 1, SE SE NE 32-1s-22w, had broken sandy shale and hard lime from 4024 to 4795 feet. It was drilling ahead and will be carried to 6500 feet if production of importance is not found at a shallower depth. The test is located on a block of approximately 10,000 acres assembled on the basis of geological work done by Clyde Becker of Chickasha, Oklahoma.

Carter Oil Company's Williams 1, SW NE SW 27-2s-3w, interesting deep test in the old Fox field of northwestern Carter County, was drilling below 7371 feet in green shale and still looking for Wilcox sand. The test went into Simpson formation at approximately 6600 feet.

Sinclair Prairie Oil Company's Stockton 1, SE SE SW 26-6s-2w, 15½ miles west of Marietta in western Love County, was drilling below 4285 feet. This is a mystery test from which only the drilling depths are being released.

BRITTON REVIVED

Large well again gives hopes of good field

Oklahoma City.—Slick-Urschel Oil Company's Meeker 1, NW NW NW 29-13n-3w, southeast offset to the discovery well in the South Britton pool of northwestern Oklahoma County, revived hopes for the area when it yielded 2223 barrels of oil in 12 hours and was estimated as making gas at the rate of 6,000,000 cubic feet per day. Top of the Simpson dolomite was found at 6550 feet. After passing through only four feet of Wilcox sand, the top of which is unknown, the bit went back into Dolomite which was drilled to 6755 feet. It was acidized with 3000 gallons on Friday, September 6, and shut in to await the reaction.

Slick-Urschel Oil Company et al's Zielney 1, NE NE SW 29-13n-3w, one-half mile southeast of the discovery well, had been drilled to 6931 feet, where it was shut down to run casing and test. It is looking unfavorable since it is considerably lower and has had only slight indications of oil and gas.

FITTS PRESSURE

Ada, Oklahoma.—Bottom-hole pressure in 24 key wells in the Fitts pool of southeastern Pontotoc County was reported to have averaged 1556 pounds per square inch, there having been no pressure decline since August 2 although more than 600,000 barrels were removed from the Bromide formation during the 30-day period. Decline for the same wells during the period July 2 to August 2, 1935, averaged 62 pounds.

TO DEEPEN TESTS

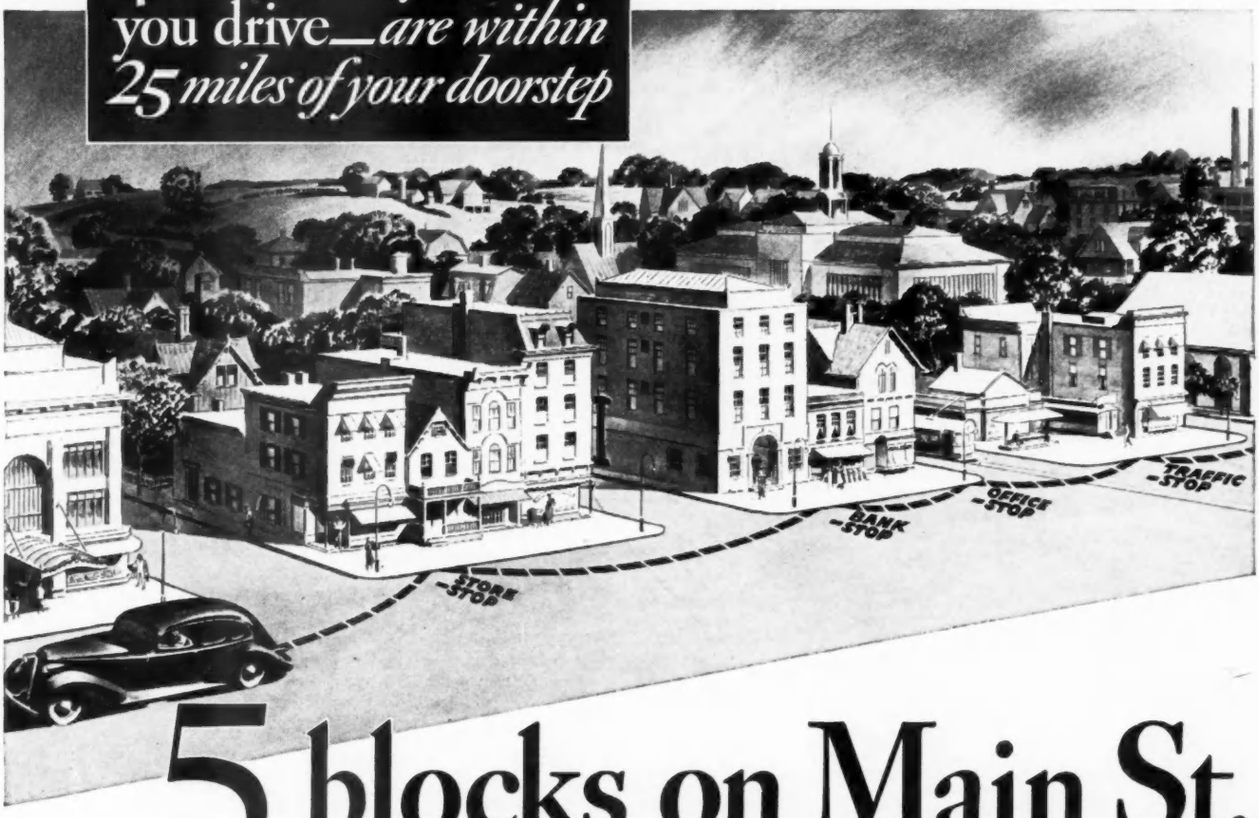
Tulsa.—Fred Patrick and associates have started cleaning out and will deepen to Wilcox sand the old Hiram Wilson's Foreman 1, SE SE SW 31-16n-9e, one mile south of Bristow in central Creek County. This test was drilled to 3090 feet and shut down early in 1933 after finding Dutcher sand dry. Strozer Drilling Company et al have rig up for Joseph 1, SE NW NW 12-15n-9e, a Wilcox sand test near the town of Ruth in the southeastern portion of the county.

58 NEW LOCATIONS

Last week in Oklahoma represents increase

Tulsa.—For the second time in as many weeks the new work situation in Oklahoma took and upward jump as scouts made 58 first reports from 22 counties. Seminole County took the lead with 10 starts; Creek and Okmulgee Counties were tied for second place with six each; Muskogee County had five; Osage and Pontotoc Counties, four each; Hughes and Okfuskee Counties, three each; Carter and Oklahoma Counties, two each; and Caddo, Cleveland, Comanche, Grady, Jefferson, Logan, Lincoln, Marshall, No-

4 out of every 5 miles you drive—*are within 25 miles of your doorstep*



5 blocks on Main St. can use *more* gasoline *than a mile on a highway*

Today's starting, shifting and accelerating waste your money . . . if your gasoline hasn't these 3 Kinds of Power

YOU often start your engine 10 TIMES a day . . . start your car from a dead stop 30 TIMES a day . . . and shift gears 60 TIMES a day!

No wonder car manufacturers say you get TWO to FIVE miles LESS a gallon on "round town" driving than you do on the open road.

To save money on today's "stop-and-go" driving, you need a gasoline that is made to fit *today's driving conditions!*

This means that you need a gasoline that not only STARTS quickly . . . that not only ACCELERATES rapidly . . . that not only SAVES on steady running . . . but that does ALL THREE of these things.

Shell engineers have finally perfected a gasoline with these three different kinds of power! It is SUPER-SHELL, the FIRST truly balanced gasoline . . . on sale at 30,000 neighborly Shell stations from Coast to Coast.

With its 3 kinds of power, Super-Shell saves money 3 WAYS! Fill up your tank at a Shell station TODAY! See why thousands of motorists are becoming Shell "regulars."

SAVES in 3 ways

STARTING—Super-Shell can save up to a cupful on every "cold" start. Even in summer, your engine is relatively "cold" when not running, because normal running temperature under the hood is over 150°.

PULLING—It can save up to a cupful in 10 minutes of hard pulling, or in rapid acceleration, or hill climbing.

RUNNING—It can save up to a cupful, many motorists report, in an hour on the long stretch—thus saving on long runs as well as on short trips.

Remember, when you save 16 cupfuls, you save a whole gallon!

SHELL

SUPER-SHELL

Saves on today's stop-and-go driving

ble, Pawnee and Stephens Counties, one each. Only 34 first reports were made during the preceding week but this was an increase of more than 50 percent over the period which preceded it. Field work had dropped considerably below normal during August primarily due apparently to water shortage over a large portion of the state.

Of the 49 completions 27 were oil wells which added 58,674 barrels to the cumulative initial production, three were dry gas wells with combined initial rating of 22,250,000 cubic feet, 18 were dry holes and one was an abandoned location. Three wildcat dry holes involved 14,234 feet of drilling, four old wells were deepened 924 feet and the depths of the remaining 42 completions totaled 127,563 feet, a total of 142,721 feet of drilling completed during the week.

TAKE BEAVER BLOCK

Oklahoma Panhandle test by October 1

Enid, Okla.—William H. Atkinson, independent operator of Oklahoma City, is reported to have taken over a block of approximately 20,000 acres centering around the town of Knowles, 18 miles northeast of Beaver, in northeastern Beaver County in the Oklahoma Panhandle. According to the report Atkinson has agreed to drill a test commencing not later than October 1, 1935. The block as reported includes the following: All section 1, E½ section 2, all sections 3, 10, 11 and 12-4n-26 ecm; all sections 3, 4, 5, 6, 7, 8, 9, 10, 16, 17, 18 and the W½ and the S½ SE of section 15-4n-27 ecm; S½ and S½ NW of section 3, S½ NW and S½ NE of section 4, all sections 5, 8, 9, 10, 11, 14 and 15, SW of section 12, W½ of section 13, S½ of section 16, S½ of section 21, all of sections 17, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35 and 36-5n-26 ecm; all sections 18 and 19, W½ SE the SW and N¼ N½ S½ of section 20, W½ NE and E½ NW and SW of section 27, W½ and NE SW SE 29, all sections 30, 31, 32, W½ section 33 and NW of section 34-5n-27 ecm; and section 32-6n-26 ecm.

This area at one time was carefully core-drilled and blocked by Empire Oil & Refining Company and later shot with seismograph by another major company. Nearest production is the old Sinclair Prairie Howell 1, section 14-26n-24w, approximately 26 miles to the southeast of the Atkinson block. This well was drilled to 8583 feet in Mississippi lime and plugged back to about 5400 feet from which depth it made several million cubic feet of wet gas.

GERMAN TEST

Considerable importance is attached by German geologists to a test being drilled near Aschberg, Munsterland, Germany.

The test, scheduled to go to a depth of more than 2000 meters, will undertake to verify whether gas emanating from a coal mine shaft is petroleum gas or coal gas.

"Taegliche Berichte", a German periodical, states that the test near Aschberg represents the first attempt to find oil in a coal field in Germany.

OKLAHOMA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BECKHAM COUNTY—		
West Oak Oil Co.'s Murray 1, cw½ se sw 10-9n-25w	¶20¼	3507
CARTER COUNTY—		
Twin State Co.'s Brindenthal 1, nw ne ne 9-1s-3w (pb 2963)	90	3001
COTTON COUNTY—		
Parkins & Collum's Smith 6, ne se se 34-1s-10w	lcn.	abd.
CREEK COUNTY—		
Sidwell Drlg. Co.'s McGilbray 1-A, sw ne ne 30-14n-8e (otd 4064)	36	4067
Home Gas Co.'s Givins 2, cne se 27 18n-7e	*	3540
Mars et al's Lindsay 1, nw se sw 24-18n-8e	*	2754
Galbreath & Byers' Tiger 1, se sw ne 35-18n-8e	*	2433
Big Four Pet. Co.'s Holmes 1-A, sw ne se 32-19n-9e	75	2986
GARVIN COUNTY—		
Mid-Tex Pet. Co.'s Ward 1, sw sw se 19-1n-2w	*	1968
HUGHES COUNTY—		
Manahan Oil Co.'s Dixon "B" 1, nw se nw 12-9n-8e	432	1757
Potco Oil Co.'s Dixon 1-A, sw ne nw 12-9n-8e (otd 1491)	125	1756
JACKSON COUNTY—		
Gypsy Oil Co.'s Eley 1, sw se se 10-1n-20w	47	1420
JEFFERSON COUNTY—		
Farlyn Oil Co.'s Seay 23, sw se se 3-7s-5w	32	1995
LINCOLN COUNTY—		
Magnolia Pet. Co.'s Wilson 2, se nw se 33-14n-4e	76	3079
MAJOR COUNTY—		
I. T. I. O. Co.'s Fairview 1, ne sw se 32-22n-14w (pb 6920)	*	7451
MARSHALL COUNTY—		
Schemerhorn's Rich 1, sw se se 35-4s-4e	*	1053
MUSKOGEE COUNTY—		
Foltz' McIntosh 2, nw ne se 17-14n-17e (otd 1360)	75	1904
NOBLE COUNTY—		
Midco Oil Corp.'s O'Neil 1-A, se sw se 15-23n-2w	216	4244
OKFUSKEE COUNTY—		
Devonian Oil Co.'s Hawkins 4, sw ne ne 3-11n-11e	*	3778
Oklahoma Oil Corp.'s Harchoche 1, cse sw 13-13n-10e (pb 2608)	¶1	2710
OKLAHOMA COUNTY—		
Harrell-Davis' Wallace 1, nw ne se 22-11n-3w	480	5814
Phillips Pet. Co.'s Freeburg 2, ne sw ne 34-12n-3w	3144	6525
Riddle's Price 1, sw se nw 30-14n-3w	¶18-2175	6700
Continental Oil Co.'s Young 4, ne ne nw 31-14n-3w	¶118-17,906	6702
Mid-Continent Pet. Corp.'s Young 6, nw nw ne 31-14n-3w	¶48-8321	6701
Gypsy Oil Co. & I. T. I. O. Co.'s Salisbury 1, nw ne ne 13-14n-4w	*	6730
OKMULGEE COUNTY—		
Cusack et al's Johnson 2-A, cnw sw 29-12n-12e	*	1974
Harris' Colbert 1, csl nw nw 22-14n-12e	*	1756
Downing's Colbert 2-A, cwl e½ nw 1-15n-14e	19	1350
Aggas' Anderson 3, nw sw ne 3-15n-14e	*	1005
Misener's Carter 8, cnl ne se 10-15n-14e	*	950
Lincoln Oil Co.'s Roberts 16, se ne sw 29-15n-14e	10	1791
OSAGE COUNTY—		
Norbla Oil Co.'s 3, nw sw sw 4-20n-10e	*	334
Barnsdall Oil Co.'s 30, sw nw ne 30-21n-9e	*	419
Mid-Continent Pet. Corp.'s 1, nw nw se 30-22n-8e	8	3013
Champlin Ref. Co.'s 4, ne se se 4-25n-6e (pb 2734)	206	2737
Carter Oil Co. et al's 9, sw nw sw 10-25n-6e	1632	2851
Bay Oil Corp.'s 2, sw se se 14-26n-6e	*	3059
The Texas Co.'s Revard 6-A, ne ne sw 17-21n-10e (pb 2255)	*	2560
PONTOTOC COUNTY—		
Skelly Oil Co.'s Akers 1, se sw ne 36-2n-6e	1512	4445
Carter Oil Co.'s Smith 1, ne nw sw 28-2n-7e	1338	4151
Moore et al's Woodruff 3-A, ne nw se 29-2n-7e	17,808	4164
Woodruf 4, nw nw se 29-2n-7e	1592	4238
Crab-Craw's McAlester 1, cne ne 9-4n-6e	*	2415
POTTAWATOMIE COUNTY—		
Berrett's Brandenburg 2, nw sw ne 3-7n-4e	516	4111
SEMINOLE COUNTY—		
Gypsy Oil Co.'s Grayson 3-A, ne sw nw 13-6n-5e	380	3830
Stanolind O&G Co.'s Sarkey "B" 2, nw nw se 31-7n-8e (otd 4214)	423	4326
STEPHENS COUNTY—		
George Pace's Damron 1, se se sw 25-2s-6w	*	1910
TULSA COUNTY—		
Mechlin's McIntosh 1, csl sw sw 12-17n-14e (pb 1087)	¶1	1886

*Failures; †Junked; ¶Million cu. ft. gas.

TWO LARGE WELLS

Oxford and Lorraine lead Kansas development

KANSAS WEEKLY STAFF REPORT

Wichita.—The old Oxford townsite pool made another step toward the class of a major pool of the state during the week when Shell Petroleum Corporation's Rothwell 3-A, SE NW SW 14-32s-2e, started flowing at the rate of 360 barrels per hour from 2860 feet, the total depth. Top of Simpson dolomite was encountered at 2799 feet and at 2823 feet it was flowing at the rate of 130 barrels per hour. It is 21 feet structurally higher on top of the Dolomite than any other well in the pool.

Skelly Oil Company's Does 2, SE NE SW 14-17s-9w, in the Lorraine pool of southwestern Ellsworth County, pumped 2346 barrels on a potential late in the week to place it among the largest of the wells in Western Kansas. It has established a preliminary potential of 1740 barrels. Production is from Siliceous lime at 3171 to 3174 feet, the total depth.

KANSAS WORK SLOW

Only 15 new starts are made during past week

Wichita, Kansas. — The failure of Kansas field activity to pick up after much needed rains can be explained only by the fact that a number of pools in the western portion of the state have no market outlet and several others have connections for less than their reasonable allowables. To this might be added the fact that no pools of apparent wide extent are now under development. In general the areas now most active seem to be on structures of limited extent. During the week scouts made 15 first reports, the lowest number since the week ending October 13, 1934. This drop should not be

taken as an alarm signal for a general slowing down of field work although it is believed that Kansas will remain below its average for the first half of the year until some provision is made for additional outlet for new pools. Additional outlets for West Kansas pools are to be built soon, then activity is expected to pick up. Russell County led in new work with five first reports; Sumner County had three; Cowley County, two; and Butler, Greenwood, Logan, Rice and Woodson Counties, one each.

The 23 completions last week included 14 oil wells rated at 6751 barrels and nine dry holes.

In a report released by the conservation division of the Kansas Corporation Commission 19,711 wells in the state are shown to have a potential rating of 536,456 barrels per day. September allowable has been set at 140,508 barrels per day and allocated to the pools on the basis of percentages ranging from six to 100 percent. Wells or leases averaging 15 barrels or less per day are permitted to produce to capacity. The Eberhart, Eichman, Donovan, Millburger, South Neidenthal, St. John, Schowalter, Shallow Water, Sullivan siliceous, and Wakeeney pools are shown to be with market connections and the Gorham, Fairport, Neidenthal, and Russell pools to have only limited outlet.

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BUTLER COUNTY—		
McKay et al's Haines 2, se ne sw 24-26s-4e	100	2640
Marathon Oil Co.'s Blood 27, cwl ne sw 21-28s-4e	*	2525
COWLEY COUNTY—		
Sandiford & Connell's Drury B1, cnl s½ ne ne 31-31s-6e	80	2958
ELLIS COUNTY—		
Palmer & Storm King's Ruder 1, se ne nw 17-15s-18w (otd 3429)	818	3440
ELLSWORTH COUNTY—		
Empire O&R Co.'s Schmidt 1, se se se 11-17s-9w	550	3217
Bradley & Scanlon's Mahoney 4, ne sw se 14-17s-9w	792	3187
GREENWOOD COUNTY—		
Henderson & Holden's Hess 4, cse nw 34-22s-11e	75	1930
Ward McGinnis' Shultz 1, se se sw 31-23s-12e	20	1875
Harwood Oil Co.'s Ladd 2, se se sw 26-25s-8e	*	2474
HARPER COUNTY—		
Kessler-Thier et al's Wolfje 1, sw sw ne 17-33s-6w	*	5078
HARVEY COUNTY—		
Selby Oil Co.'s Sperling 1, se se se 14-22s-2w	71	3320
McPHERSON COUNTY—		
Palmer's Clark 2, ne ne se 31-18s-2w	65	2340
Dickey Oil Co. et al's Good 1, se sw nw 13-19s-3w (pb 2372)	*	3275
RENO COUNTY—		
Gypsy Oil Co.'s Krehbiel 1, cnw ne 35-23s-4w (otd 3326)	146	3355
Shell Pet. Corp.'s Flory 1, cse se 9-24s-4w	1395	3382
RICE COUNTY—		
Ramsey Pet. Co.'s Gouldner 1, nw sw ne 16-18s-9w	*	3285
Empire O&R Co.'s Myers 4, nw se sw 21-19s-9w	*	3616
Shell Pet. Corp.'s Tourneat 5, nw sw se 29-19s-9w	*	3340
Tourneat 6, se nw se 29-19s-9w (pb 3214)	*	3290
Gypsy Oil Co.'s Stoltz 1, se se nw 32-19s-10w	1134	3325
RUSSELL COUNTY—		
Empire O&R Co.'s Ehrlich 3, se se se 28-13s-14w	*	3520
Billings' Witt 12, nw ne se 4-14s-15w	1399	3090
Bridgeport Machine Co.'s Mills 7, sw se ne 4-14s-15w	106	3111

*Failures; †Junked; ¶Million cu. ft. gas.

Weak Wells Continue

BIG PERCENTAGE IN EAST TEXAS FIELD FAIL TO FLOW

WEEKLY STAFF REPORT

Tyler, Texas. — Independents were credited with 49 of the 69 completions reported the past week in the East Texas field, or approximately 71 percent of the total. Bulk of the current development work centers on leases that offer a small potential output, thus accounting for the high ratio of non-flowing wells included lately on completion reports.

More than 31 percent of the producers added the past week required swabbing, or pumping equipment to establish initial gauges. Nine wells were equipped for pumping at the start of production, while 12 others were swabbed. Independents were identified as the owners of all but three of the new additions to the non-flowing list.

Two failures completed the past week were drilled on the east flank of the structure. E. C. Laster et al's Elliott 1, F. Anderson Survey, Joiner area, was abandoned at 3579 feet after failing to pick up porosity in the Woodbine zone. Neversuch Oil Company's R. B. Porter 1, SWc 16.33-acre lease, W. P. Simpson Survey, northeastern Gregg County, was abandoned at 3655 feet after swabbing a small amount of oil from sand at 3605-19 feet. It is located in the south portion of the survey and about 1500 feet west of a small pumper developed recently by Port Bolivar Oil & Refining Company. G. S. & L. Oil Company and Paul B. Scott's W. D. McQueen 1, NWc 87.31-acre lease, James Price Survey, extended production about 1200 feet east, with a flow of 40 barrels of oil in 30 minutes from sand at 3566-78 feet.

Royal Petroleum Corporation and M. D. Rudman's B. A. Skipper 1, NWc 18.4-acre lease, I. G. Skillern Survey, also on east edge of production in northeast Gregg County, flowed 35 barrels hourly from sand at 3558-61 feet, with an elevation of 391 feet. It is a short distance west of Tide Water Oil Company's Skipper 2, which logged barren sand and gravel at 3566-79 feet, and was abandoned at the latter depth in May, 1934.

Exploration work beyond the proved limits of production has resulted in the addition of a number of acres since the first of the year, and has also exacted a toll of about 70 dry holes during the eight-month period. Independents are sponsoring most of this advance drilling, and frequently are rewarded with wells that will not yield sufficient production to retire the original cost of the well.

The volume of drilling taking place in sections of the field with bottom hole water near the top of the oil sand is reflected by the number of tests drilled and completed in the top of the Woodbine. Completions the past week included 10 wells that penetrated one foot or less into the sand section, while four others cored only two feet of the sand.

Van Extension

THIRD LARGE PRODUCER IN NORTH END OF FIELD

Tyler, Texas.—Sparsely explored territory on the north line of the Van field added a third large producer with completion of Humble Oil & Refining Company's J. F. McPherson 2, SEc 72-acre lease, Wm. Daniel Survey, averaging 98 2/3 barrels of oil hourly on three-hour potential gauge through 11/16-inch choke. Woodbine sand was topped at 2746 feet, and the hole drilled to 2939 feet, or 2478 feet sub-sea. The gas volume was rated at 796,000 cubic feet daily on the above choke. This well is a west offset to the company's J. R. Oliver 1, which revived activity in the area last July with a potential gauge of 61 2/3 barrels per hour through 11/16-inch choke from sand at 2838-2942 feet. Pure Oil Company's L. M. Brawner 8, a south offset to the latter, was a larger producer.

The McPherson and Oliver leases and that portion of the Brawner tract adjoining on the south were considered doubtful for production as result of Humble Oil & Refining Company's McPherson 1, SWc of the lease, having barely qualified as a commercial producer when completed in sand at 2959 feet in March, 1932. More recent ex-

ploration work has uncovered a prolific area lying immediately to the east, and southeast. These tests are all situated within the unitized section of the Van field.

Location has been made for Humble Oil & Refining Company's J. G. Luther 1, NEc 32-acre lease, near west line of Wm. Daniel Survey, a mile northwest of nearest production in the Woodbine zone, but near shallow production. It is also within the unit block.

Cayuga Extended

TO NORTH BUT ATTEMPT TO SOUTH IS A FAILURE

Palestine, Texas.—Productive limits of the Cayuga field, Anderson County, were advanced to the north and northeast last week, but an attempt for a major extension to the southwest portion of the structure proved a failure. Tide Water Oil Company and Texas Seaboard Oil Company's N. N. Wills 21-A, Trinity sand test in the mid-section of the field, was coring below 8900 feet late last week, having previously tested hot salt water in the middle zone of the Trinity at 8867 feet.

Roeser-Pendleton, Inc.'s C. R. Litchfield 1, SEc 78-acre lease, T. J. Lindley Survey, Henderson County, situated one location north of production, was preparing to complete after cementing casing on oil saturated sand logged at 4075-79 feet, with shale to 4080 feet. The well was drilled to 3756 feet subsea. Clark-Cowden Drilling Corporation's C. D. Wright 1, center of 20-acre lease, I. Clendennen Survey, afforded a substantial extension to the northeast of former production with a flow of 110 barrels oil on 24-hour gauge through the regulation one-eighth-inch choke on tubing from sand at 4076 feet, or 3764 feet sub-sea. The last 4½ feet of Woodbine section taken in by this outpost showed excellent saturation, according to representatives of the company.

Tide Water Oil Company and Texas Seaboard Oil Company over-stepped the deadline for production in drilling W. H. C. Goode 3, J. C. Collins Survey, about 10,000 feet due south of completed wells, and temporarily halted operations at 4043 feet. It was carried to a sub-sea depth of 3790 feet, or into the water zone, without encountering oil or gas.

ENLARGING PLANT

Of Solvex Refineries at Gladewater, Texas

Tyler.—Foundation for a cracking unit has already been laid and heavy materials now are being shipped into the Solvex Refineries, Inc., plant at Gladewater. In addition to a cracking unit, the refinery plans include a complete vapor recovery plant with a stabilizer and debutanizer, together with special solvent treating apparatus and also a treating plant that will prevent gum forming compound.

It is understood that crude connection for the Solvex plant now are being arranged, and that the plant of Culver Oil Company, which was purchased recently by Solvex Refineries, Inc., is being revamped to provide for cuts of technical naphthas suitable for the paint and cleaning trades as well as special Diesel oils, etc. Offices of the engineers in charge of this new plant have been established at Gladewater, and contracts for new tankage and cooling towers have been let.

M. L. Freese, vice president of Bell Oil & Gas Company of Tulsa, Oklahoma, has been elected vice president of Solvex Refineries, Inc., of Gladewater, Texas. I. Arthur Anson, vice president of Bell Oil & Gas Company, has been made secretary and treasurer of Solvex Refineries, Inc. Both officers will continue as officials of Bell Oil & Gas Company. A cracking unit is being installed at the plant, and other equipment is expected to be added soon.

J. A. MacKinnon, formerly with Globe Refining Company at McPherson, Kansas, and Sparco Refining Company at Shreveport, has joined Solvex Refineries, Inc., as general superintendent. He will be located at Gladewater, Texas. At present he is engaged in reconditioning the old Culver Oil Company refinery, which has been purchased by Solvex Refineries, Inc.

EAST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Arkansas FO Co., Wheelis 10 (80½-ac)	7000	3706
Ball & Lea, Worrell 1 (10-ac)	10	3604
S. C. Cole et al, Reese 1 (15.35-ac)	250	3819
H. W. Donnell et al, Propes 1 (53¼-ac)	480	3591
Fair & Thompson, Wiley 5-B (26-ac)	650	3657
F. W. Fisher et al, Eaton 7-B	7500	3765
HB&W Oil Co., Henson 2 (4.62-ac)	50	3575
Jenkins Oil Corp., Camp 9 (34-ac)	480	3630
E. C. Laster et al, Elliott 1	*	3579
Jack T. Life-W. E. McKinney & Barr, A. Green 2 (10-ac)	7500	3811
Luling O&G Co., Alford 4 (10-ac)	500	3675
Magnolia, Wright 33 (91.9-ac)	10,000	3670
Marathon, Moores 28 (200-ac)	6000	3741
Alex McCutchin et al, Jarvis 4 (85.8-ac)	5000	3748
M. H. McMurrey et al, Turner 17 (83-ac)	7500	3844
Mid-East Prod. Co., Cook 1 (4.08-ac)	6800	3711
Octo Oil Corp., Tipps 8 (21.91-ac)	170	3590
Peachtree Oil Co., Stroud 4 (60-ac)	600	3570
B. F. Phillips et al, Herring 1 (14½-ac)	75	3618
A. J. Sanders et al, Cole 2 (5-ac)	7000	3821
Sinclair Prairie, Kinney 64 (579.2-ac)	8000	3628
Kinney 65 (579.2-ac)	9300	3677
Wilson 11 (65-ac)	750	3755
Sun, Henson 21 (216½-ac)	2000	3659
Pace 19-B (637.45-ac)	6000	3799
Sutton & Hawkins, Kangerga 2 (44½-ac)	1000	3654
L. V. Thompson 3 (43.6-ac)	550	3655
L. V. Thompson 4 (43.6-ac)	500	3654
Texas Canadian Oil Corp., Irion 7-C (27-ac)	5500	3765
Vaughn Prod. Co., Reagan 8 (28.03-ac)	8000	3773
R. H. Vise et al, Alford-Shell 5 (120-ac)	3600	3785
Westexas Oil & Roy. Corp., Talley 3 (9.82-ac)	240	3600
Broughton Wilkerson et al, Bradford 1-B (32.34-ac)	600	3570
KILGORE AREA—		
C. W. Crockett-Yandell Rogers, Still 1 (9.13-ac)	15	3664
Fleetborn Oil Co., Robertson 2 (20-ac)	480	3626
H. S. Forman et al, R. H. Rowland 5 (8.84-ac)	80	3562
Gulf, Christian 32-C (277.85-ac)	8000	3721
Hurtle Oil Co. (was Rozel), Sexton 8 (55.26-ac)	500	3680
R. C. Lipscomb et al, S. Jackson 2 (25-ac)	3600	3720
C. H. Lyons et al, Richards-Shell 5 (150-ac)	65	3566
J. C. Prine et al, Warren 5 (22.7-ac)	1500	3746
Retsal Drl. Co., Britton 3-A (17.64-ac)	360	3650
Shell, Register 8 (47.87-ac)	7000	3668
Watson 58 (385.2-ac)	8000	3558
E. L. Smith Oil Co., Register 5 (29-ac)	6800	3623
L. L. Sugar et al, Davis 4 (10½-ac)	10,000	3623
Sun, Reese 14 (124.22-ac)	6000	3650
Triple Oil Co., Montgomery 4 (25.86-ac)	1200	3592
H. C. Waldorf et al, Williams 1 (2.34-ac)	750	3650
W. E. West et al, King 1-A (1.1-ac)	8500	3655
Woodley Pet. Co., Ladd 10-A (50-ac)	9000	3630
LONGVIEW AREA—		
Arkansas F. O. Co.-Stanolind, Lathrop 13-A (96-ac)	7500	3612
Arkansas F. O. Co., Tenery 4 (20 85-ac)	20	3603
Empire, J. T. Jeter 12 (123-ac)	20	3616
G. S. & L. Oil Co., McQueen 1 (87.31-ac)	7000	3578
Humble, W. C. Mackey 20 (198½-ac)	4500	3628
Thos. D. Humphrey, Thomas 10 (50-ac)	2000	3630
Jones & O'Brien, McHaney-Loeb 8 (39.82-ac)	10,000	3555
Mabee Cons'ld Corp., Whitehurst-Shell 6 (60-ac)	6000	3656
O. V. Mullins et al, Johnson 3 (13½-ac)	3500	3665
Neversuch Oil Co., Porter 1 (16.33-ac)	*	3655
Nicholson-Bramlette Oil Co., Bramlette 2 (34.6-ac)	12	3638
Oils, Inc., Sanders 17 (73.63-ac)	7000	3609
Royal Pet. Corp.-Rudman, Skipper 1 (18.4-ac)	1200	3561
Shell, Landers 20 (132.99-ac)	4500	3660
Simms-Stanolind, Flewellen 36-B (374-ac)	6500	3712
Sun, Shoults 10 (100-ac)	9000	3686
Thomas 10 (72.2-ac)	8500	3553
Trippmead Co., Sturdevant 2 (3-ac)	3000	3616
ANDERSON COUNTY (Cayuga field)—		
Clark-Cowden Drl. Corp., C. D. Wright 1 (20-ac)	2000	4076
VAN ZANDT COUNTY (Van field)—		
Humble, J. F. McPherson 2 (72-ac)	9600	2939
J. B. Stoddard et al, D. F. Cade-Magers 1	10	1284
HUNT COUNTY—		
Long & Wolfe, A. L. Chapman 1	*	2649

*Failures; †Junked; ¶Million cu. ft. gas.

TEXAS PERMITS UP

Big increase shown with 344 new tests approved

Austin, Texas.—Permits for drilling 344 new wells in Texas were approved by the Railroad Commission last week, an increase of 125 over the number allowed the week before.

Abandonment of the policy of delaying action on applications for permits requested as exceptions to the spacing rule accounted for the increase. This policy was inaugurated on August 3, and until

last week, only a few such applications had been approved.

Permits for 199 wells to be drilled in East Texas were approved, almost every one of which was an exception to the rule. There were 104 in Rusk County, 50 in Gregg County, 31 in Upshur County, 13 in Smith County and one in Cherokee County. Thus the possibility of cessation of drilling in this field, which seemed a certainty in view of the policy announced, was entirely removed.

Southwest Texas reported 41 new permits with 17 in Duval County and seven in Bee County. In the Gulf Coast area, 30 new permits were listed.

North Texas listed 37 new locations, of which 15 were in Baylor and 14 in Montague County. Nine permits in East Central Texas were allowed.

In the Panhandle area 16 new wells were reported, and there were 12 in West Texas.

Although the average number of permits has been down for the past month, exceptions allowed during September should tend to equalize the difference and cause the average for each of the first nine months of the year to be about the same.

CHALK HILL TEST

East edge wildcat makes water in deep zone

Wichita Falls, Texas.—Salt water was in evidence with a small amount of oil when swabbing test was given Chas. Christie and H. Graham's G. H. Plowman 1, NWc Lot 1, H. Corzine Survey, situated about one half-mile east of the Chalk Hill field, only deep producing field in Archer County. Sandy-lime zone, identified as the Canyon, was logged at 2207-14 feet. Casing was cemented on top of the pay. The owners plan to plug back and try and complete the well as a pumper.

O. M. Pois, B. F. Schultz and S. H. Fagadau's J. H. Turbeville 1, situated near Grace and Woods' Turbeville 1, T. P. Glass Survey, first producer completed from the lower Canyon lime in Archer County, logged dry sand at 2824-38 feet, and was abandoned at 2859 feet. The discovery well was completed as a 25-barrel pumper last June at 2830-47 feet, and was drilled on the strength of saturated sand passed up by W. J. Grisham and A. R. Dillard's Turbeville 1, an offset, which was carried to the Strawn zone and abandoned at 3748 feet. Since the completion of the first producer, E. Garson and M. Siegel's W. D. Pace 1 also proved dry in drilling to 2855 feet.

The Texas Company's Les K. Johnson 9, an inside location in the Crowell pool, western Foard County, encountered salt water in drilling to 3625 feet, where it tested 25 barrels oil and two barrels water with about 750,000 feet of gas. The hole has been plugged back to 3623½ feet to try for successful completion.

Allowable production for the North Texas district was advanced from 56,000 barrels to 58,500 barrels daily effective September 1 by the Texas Railroad Commission. The district was cut in July along with other areas in the state.

Leases Assigned

PURE OIL DEEDS KEYSTONE ACREAGE FOR OVER-RIDE

NORTH & WEST TEXAS

WEEKLY STAFF REPORT

San Angelo, Texas.—Assignment of operating control by Pure Oil Company of its 1440 acres of leases in the Keystone field, north central Winkler County, to Crafton Oil Company, W. A. Moncrief and Eddie A. Showers requires the drilling of two immediate tests. Amon G. Carter, Fort Worth publisher, is head of Crafton Oil Company of its 1440 acres of leases in the B. Walton land, and a west offset to Sid Richardson et al's Walton 1, which is preparing to deepen from 3602 feet after being completed last month flowing 250 barrels oil and 3,000,000 cubic feet gas daily. The other location will be in the SWc NE¼ Section 1, Block B-3, PSL Survey, or about one-half mile northeast of the above producer, which was drilled on acreage contributed by Pure Oil Company.

No cash consideration was involved in the acreage assignment by Pure Oil Company. However, the company will receive one-eighth over-riding royalty with the assignees financing the development and operation of the property, then after being reimbursed in full from production, 50 percent of the profits thereafter will be paid to Pure Oil Company.

Cleanout work or drilling operations continue on eight of the nine tests undertaken almost simultaneously by Gulf Production Company on its Keystone Cattle Company property in the Keystone area. Keystone 8, most easterly location of the group, was conceded an outside chance of making a producer in the face of its low structural position when oil saturated lime was logged at 3915-47 feet, or 983 feet below sea level. Keystone 9, southeast outpost, has progressed to the 4126-foot level, or 1180 feet sub sea, without registering sufficient porosity to make a producer. Bailing operations were under way late last week at 3200 feet, and the absence of a rising fluid level indicated that bottom-hole water had not been encountered. Earlier reports crediting the above two edge tests with showing water in the lime zone have since been discontinued, as the fluid proved to be rotary returns. Other active tests held by Gulf Production Company are at the 3600 to 3700-foot level, and a limited amount of oil has been produced from each.

Results of a shot given American Liberty Oil Company et al's J. B. Tubb 1, second prospective oil producer for the Sand Hills area, western Crane County, will not be determined until bridge formed by the shot is removed from the casing. The well filled 3000 feet with oil from lime at 4298-4314 feet, and this horizon was shot with 80 quarts of nitro. The water table for the area is about 300 feet below the present depth of the well, as indicated by the discovery well. The latter registered a prolific oil flow in the top portion of the lime, but decreased in deepening to a porous barren zone below.

Magnolia Petroleum Company's John Sealy 1, NWc S½ SW¼ Section 94, Block "A", G&MMB&A Survey, southern Winkler County, is a new location for the north extension area of the Gulf-O'Brien field. It is separated from production to the north by a dry hole. In the Kermit area, Winkler County, Westbrook Oil Corporation is reported to have acquired lease on the SW SW Section 7, Block B-5, PSL Survey, from the Sturm-Nolen Drilling Company for $75 per acre cash and a similar amount payable from production. This deal involves the starting of a test within six months.

New Ector Field

In northern Ector County, Sun Oil Company's O. B. Holt 1, which has established a new producing area about 2½ miles northwest of the North Cowden field, scored an increase in oil production from lime at 4312-15 feet. Drilling was halted at 4350 feet to run tubing for a swabbing test. This semi-wildcat developed water, supposedly from casing seat leak, when treated with 2000 gallons acid at 4047-4300 feet, but did not encounter more water in drilling deeper. The lime zone will be shot with nitro.

Dobbs Oil Company's Jax Cowden 1,

WEST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ECTOR COUNTY (Judkins Field)—		
The Texas Co.-Cosden Oil Corp., Connell 13	279	3670
FISHER COUNTY—		
Southern Oil Corp., Scott-Pardue 2	50	3123
E. Z. Williams-Pure 1	33	3126
HOWARD COUNTY—		
Bond Oil Corp.-L. C. Howard, Rhoton 5	1054	2750
Magnolia, Sloan-Chalk 6	20	1598
Shasta Oil Co., G. M. Dodge 2	743	2752
Sinclair Prairie, G. M. Dodge 19	525	2765
JONES COUNTY—		
Hal Hughes & Davenport, J. D. Farrow 1	*	2002
Ungren & Frazier, H. Dorsey 1-B	171	2056
SCURRY COUNTY—		
E. L. Goos et al, J. E. Murphy 1	12	2343
WINKLER COUNTY (Kermit Pool)—		
J. C. Maxwell, Inc.-Atlantic, Brown-Altman 1	90	3200

*Failures; †Junked; ¶Million cu. ft. gas.

southeastern Crane County wildcat, was preparing to resume drilling late last week at 2327 feet, having bailed 32.4 gravity oil with sulphur water in evidence. Oil saturated lime was logged at 2297-2319 feet, according to officials of the company. The source of the water has not been definitely determined.

A deep test for the extreme west corner of Pecos County is scheduled to be started in the near future in compliance with development obligation assumed by Humble Oil & Refining Company in acquiring leases on Sections 90 to 93, inclusive, and Section 136, Block 11, GH&SA Ry. Survey. The company has held a large block adjoining the above acreage for a number of years. The location is reported to be authorized for Section 94. Either the Deleware or Ordovician lime zone will be tested. Floyd Dodson et al are drilling a projected 6000-foot test in the north corner of Brewster County and about 16 miles due south of the above proposed wildcat, having progressed to 1715 feet, where a fishing job is underway. Major companies have thrown more financial support towards the drilling of the above test in return for lease protection than any other wildcat drilled by an independent in West Texas. The location is on the Texas American Syndicate fee, C NE NE Section 66, Block 10, H&GN Ry. Survey.

NORTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
L. T. Burns et al, R. E. Mathews 1	*	1201
Joe S. Jackson et al, J. W. Culberson 1, sec 38	*	1703
Kerbow et al, S. Webb 1, blk 7	*	740
Kimmell & Lee, J. J. Perkins 2, blk 26	20	1755
Pois & Schultz, J. H. Turbeville 1	*	2859
Rathke Oil Co., L. F. Wilson 4, sec 120	*	658
Underwood & Campbell, R. Campbell 13-B, sec 1377	10	1012
BAYLOR COUNTY—		
Consolidated Oil Co., Portwood 1-R, sec 1579	500	1358
Pet. Prod. Co., Portwood 4-H, sec 1579	525	1349
Portwood 5-H, sec 1579	800	1363
COLLIN COUNTY—		
Port Bolivar O&R Co., Clarkston-During 1	*	1005
COOKE COUNTY—		
Fain-McGaha Oil Corp., A. A. Otto 7	*	1000
Hudspeth - Harvey & Bass, F. J. Trubenback 1	150	891
Kewanee O&G Co., Hyman-Lanier 23-A	15	1553
F. W. Merrick, Inc., A. Knabe 8-B, blk 6	465	835
Mudge Oil Co., J. R. Johnson 2	30	809
Simpson & Fell, John Havercamp 1	*	1450
The Texas Co., J. Walterscheid 3	25	754
MONTAGUE COUNTY—		
Conoco, Seitz & Comegys, S. J. Holt 8	81	1629
WICHITA COUNTY—		
W. B. Omohundro et al, W. L. Hodges 1	15	1299
Pyle et al, W. W. Overby 5	5	1242
WILBARGER COUNTY—		
Phillips Pet. Co., Waggoner Est. 1-KKK, sec 43	115	2589
YOUNG COUNTY—		
J. W. Culbertson et al, E. C. Stovall 1, sec 2946	*	535
Clara M. Douglas et al, Finch 7, sec 40	40	667
FHE Oil Co., Jeffery 5-B, sec 41	*	714
Fresno Oil Co., J. M. Kirkland 4, sec 2249	20	689
Fultz & Kay, W. B. Harrison 2, sec 3407	140	2707
E. R. Riggs et al, J. M. Kirkland 14, sec 2249	*	775
A. L. Robb et al, R. O. Andrews 1, sec 1399	20	933
W. R. Stafford et al, J. G. Hawkins 2, sec 1917	*	550

*Failures; †Junked; ¶Million cu. ft. gas.

TWO DRY WILDCATS

Feature activity in West Central district last week

Ranger, Texas.—The Hickory sandstone, a rarely explored potential producing horizon underlying the Ellenberger limestone member of the Ordovician series in West Central Texas failed to produce in the southeastern Brown County wildcat drilled by W. W. McDonald, R. B. Campbell and associates on the M. L. Smith tract, G. A. Parker Survey. Other than a small show of gas logged at 3390 feet the Hickory zone, topped at 2864 feet after drilling a 1377-foot section of the Ellenberger lime, gave little encouragement for production. Granite wash began appearing at 3314 feet, and the formation gradually hardened to virtually granite in drilling to 3434 feet, or 2001 feet sub-sea.

Favorable showings of oil and gas encountered at 2846-64 feet, or at the base of the Ellenberger, while carrying hole full of water from above will be tested. The hole has been plugged back. The first attempt at cementing casing above the reported showings failed, and the owners were preparing to re-cement late last week. Danciger Oil & Refineries, Inc., W. D. Gully and J. B. Apperman also held interests in the above project.

Plugging orders have been issued for C. M. "Dad" Joiner et al's Gertrude Patton 1, northeastern Erath County wildcat, after developing 1500 feet of salt water in the Ellenberger lime at 5312-5314 feet. Joiner and associates assembled a block of about 30,000 acres for the drilling of this deep test.

Humble Oil & Refining Company's J. T. Davis 1-A, near SWc SE¼ Section 163, BBB&C Ry. Survey, projected 6000-foot Ellenberger like test for Throckmorton County, was reported drilling with rotary below 5150 feet. In the event of a failure resulting from the above test it is reported that the company will move the rig to Jones County to try for production in the Ellenberger on a large block of leases bought last year near the Noodle Creek field.

START GRAYSON TEST

Dallas.—Drilling has been started by Olson Drilling Company on its Southwestern Life Insurance Company 1, J. C. Jamison Survey, six miles northwest of Denison in Grayson County, North Texas. The well, which is on the Preston structure, will be carried to 6000 feet unless commercial production is found in the upper horizons. Acreage in the vicinity is held by Olson Drilling Company, Gardner Petroleum Corporation, Broswood Oil Company and Skelly Oil Company.

WEST CENTRAL TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BROWN COUNTY—		
Anderson & Yarbro, R. J. Ingram 1	*	730
H. P. Evans et al, B. Haynes 1	*	925
Pet. Oil Interests, Inc., E. Counts 1	*	666
H. P. Taylor 1	*	2030
Sher-Ritt Oil Co., Densman 5-A	*	1185
Leatherwood 2-B	13	1217
J. Stewart 17	30	1183
Van Bibber, Davis & White, J. V. Senalt 1	¶¼	940
CALLAHAN COUNTY—		
E. L. Anderson et al, E. L. Finley 1	*	765
Drew Beams et al, Jackson 3-C	*	1092
John P. Byram et al, Jackson 1	*	1310
Gillette & Parkin, Harwell 1	*	810
S. Henderson et al, A. Hickman 1	*	616
Humble, R. D. Williams 1-A	*	1375
R. D. Williams 1-B	*	1357
Wittmer O&G Properties, Mrs. R. D. Williams 3	3	332
COLEMAN COUNTY—		
Anzac Oil Corp., J. H. Hutchings 3	*	2549
R. E. Graves et al, S. H. Duggins 1	*	1423
EASTLAND COUNTY—		
Kirk O&G Co.-J. E. Davisson, Jim Gowan 1	80	2878
Moore et al, Connellee 1	*	1931
Griffin et al, Ray 1	8	1311
Murry & McDavid, L. E. Murrell 2	10	1320
SHACKELFORD COUNTY—		
Geo. Callihan et al, Davis 2	*	2010
Charter Oil Co., N. M. Mimms 3	30	1596
N. M. Mimms 4	75	1600
Choate & McCamey, E. Simpson 3-A	*	1625
Conklin & Strawn, W. D. Baker 1	*	2015
Dean & Adkisson, W. P. Newell 6	125	1436
Dickey Bros., B. S. Walker 2	7	411
A. S. Goodloe & Green, Davis 1	*	1361
Gwinn et al, J. L. Davis 1	*	590
Hart et al, J. H. Elliott 1	5	783
J. H. Elliott 2	*	893
Hoffman & Page, Morris-Buie 14	9	1605
Humble, J. H. Nail 1	18	1550
W. T. Jordan et al, L. G. Davis 1	*	1276
Letwin & Lippitt, Davis 1	*	1807
J. Moore et al, T. Thorpe 1	*	505
S. J. Price et al, J. Grimes 1	*	1219
Reliance Oil & Roy. Co., G. R. Davis 6	40	1624
G. R. Davis 9	18	1599
Diller 4	10	515
Diller 5	*	525
Dillingham 1	*	575
Roeser-Pendleton, Inc.-Conoco, Cook 16-A, sec 88	¶2	1066
Cook 59-A, sec 61	150	1372
Roeser-Pendleton & Humble, Morris-Buie 2, sec 205	18	1590
Root & Rhodes, J. G. Smith-McKelvey 2	*	852
Tannehill et al, J. B. Mathews 24	5	1102
A. C. Walker et al, J. Davis 2	*	510
Worth Pet. Co., Jeter 6	10	951

*Failures; †Junked; ¶Million cu. ft. gas.

TEXAS PANHANDLE

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GRAY COUNTY—		
Gulf, R. B. Thompson 10	322	3275
Southern Pet. Explo. Co., J. G. Noel 5	455	3210
Wilcox O&G Co., Worley-Reynolds 36	10	3220
HUTCHINSON COUNTY—		
Skelly Oil Co., E. E. Watkins 1	396	2943

*Failures; †Junked; ¶Million cu. ft. gas.

Discovery of a new naphtha field in the region of Tustanowice (district of Borys-law) has been reported by La Revue Petrolifere, a French contemporary. The item states that the discovery well had an initial production of 11 tons per day, but that this production decreased to about eight tons per day.

Polish production of crude oil continues to decline; an aggregate of 253,000 tons for the first six months of 1935 were reported as against 259,370 tons for the corresponding period of 1934.

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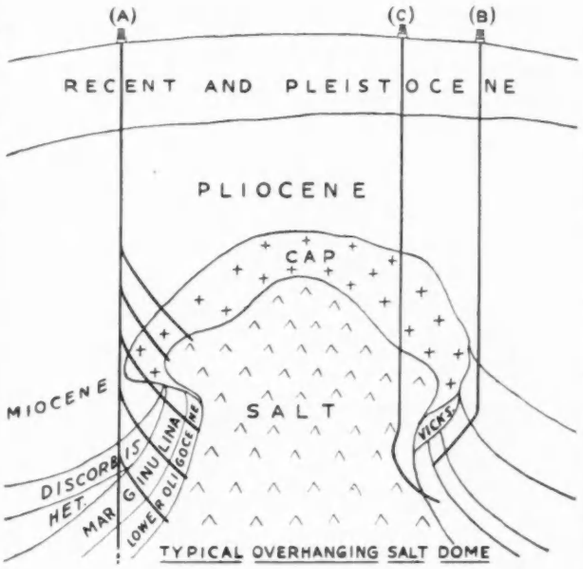

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Two New Fields

AND THIRD IN PROSPECT IN DUVAL COUNTY IN WEEK

WEEKLY STAFF REPORT

San Antonio.—Two new oil producing areas were established and a third oil field was in the making in Duval County during the week. This is the 20th new field to be opened in South Texas this year, in addition to nearly two score of new sands and key extensions to present producing areas.

Magnolia Petroleum Company scored its second new field of the year in Duval County with the completion of Duval County Ranch Company 1 in the southeast corner of Section 100, 1½ miles northwest of the outpost production of Government Wells field. The well is bottomed at 2139 feet and is rated at 13 barrels per hour initial through ⅜-inch choke, showing 400 pounds working pressure on tubing. Closed in, the tubing pressure built up to 600 pounds. The production is regular Mirando type oil and is coming from the Government Wells sand.

The well topped the sand at 2133 feet several weeks ago and blew out after the hole had been drilled to 2135 feet. It was plugged back to an upper sand to attempt completion, but failing was redrilled to the former level of 2135 feet, where casing was set. Production is coming from the section between 2135-39 feet.

The other new oil producing area was in the Labbe field, northeastern portion of the county, opened as a gas field from the Hockleyensis sand earlier in the year by Magnolia Petroleum Company. Stanolind Oil & Gas Company's Ira G. Yates 1, due south offset to the Labbe discovery well, and located in Section 416, topped the gas sand at 2431 feet, derrick floor elevation being 600 feet. Carried deeper, it topped the oil sand at 2449 feet, which continued to 2464 feet. The hole is bottomed one foot in shale at 2465 feet. Casing is set at 2449 feet.

The first 12 hours, the well flowed 72 barrels of fluid by heads, 42 barrels of which was regular Mirando type crude. Its heads are at intervals of about one hour. The well builds up a pressure of about 450 pounds on the casing and 250 pounds on the tubing.

The Yates well was flowing steadily September 6 after installing ¼-inch choke. The water volume had increased slightly, it is reported, but definite gauges are not available.

The third probable new field is Marzo Oil Company's E. R. Hagist 1, located in Block 8, Section 269, about one mile northeast of the Eagle Hill field. This well cored Government Wells sand at 2116-21 feet, elevation 460 feet derrick floor, and set casing atop the sand. The sand was said to have been sufficiently well saturated that the owners decided to set casing without making a drill stem test.

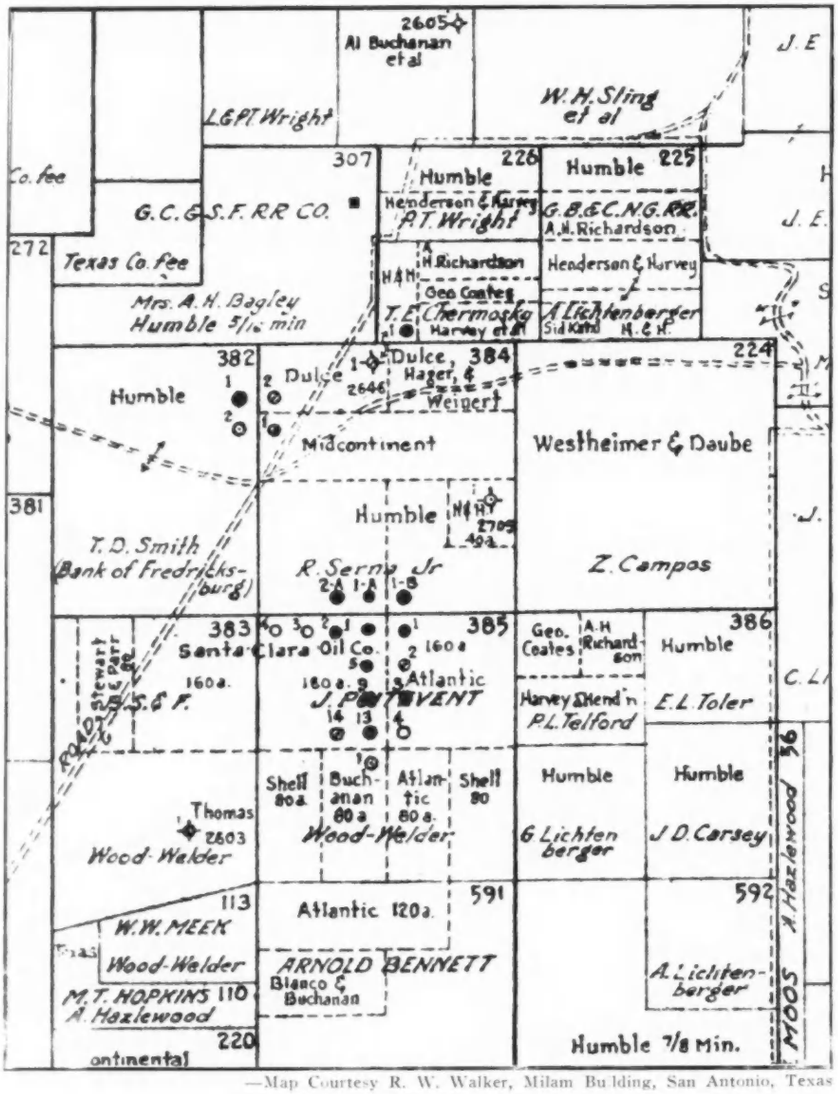
This well is on a structure well defined by a series of dry holes and wells showing either oil or gas, but not completed as producers.

Seven Sisters Prolific

The new Seven Sisters field, northeastern part of the county, is showing up as one of the most prolific Government Wells sand area yet discovered in the Duval County trend. The tenth oil well in the Government Wells sand was completed during the week. One oil well, the eleventh producer, was the discovery well, but that was in the Hockleyensis sand.

Atlantic Oil Producing Company's Wood-Welder 1, most easterly well in the field, flowed at the rate of 92 barrels of pipe line oil per hour through ½-inch choke from sand at 2502-17 feet. Choked to ¼-inch opening, it flowed 27 barrels per hour with the working pressure increasing to 250 pounds.

Southwest of the above producer, Santa Clara Oil Company's Wood



—Map Courtesy R. W. Walker, Milam Building, San Antonio, Texas

Map of new Seven Sisters field, Duval County, rapidly becoming one of the important producing areas in South Texas. Eleven producers have been completed, one being in the Hockleyensis sand and the remainder being in the Government Wells sand, also Jackson in age. Initial flows are as high as 92 barrels per hour on one-half-inch choke from this 2500-foot sand.

Welder 13 has been completed for an estimated initial flow of 50 to 60 barrels per hour through ½-inch choke from sand at 2480-90 feet, no gauge available as yet.

One active rig is being run by each of the following companies: Mid-Continent Petroleum Corporation, Dulce Oil Corporation, Humble Oil & Refining Company, Blanco Oil Company and Al Buchanan, Atlantic Oil Producing Company, and the Santa Clara Oil Company. Shell Petroleum Corporation is expected to start operations on its holdings just south of production immediately.

Loma Novio field, flank production on the Government Wells trend, is continuing to report a number of completions, as is shown in the weekly completion report. Work for a time is settled to offsets, considerable of that type development being required.

FAULT PLAY STARTS

Leasing active as result of Frio County strike

San Antonio.—Showing of Amerada Petroleum Company's new Buda lime producer southwest of the Pearsall field in Frio County has started a rather extensive leasing play through the entire lower Balcones Fault zone, which likely will result in a number of deep tests.

Two and one-half inch tubing was run into the hole last week and the hole recompleted. It showed no pressure at first, but after being swabbed, it kicked in and during the first 24 hours put 780 barrels of oil into the tanks through one-inch choke. After flowing about 72 hours, it had increased its flow to 55 barrels per hour through one-inch choke on tubing with 160 pounds working pressure and 180 pounds casing pressure. The pressure continues to rise with the production.

Amerada Petroleum Corporation has not yet announced any new locations, although several wildcats along trend have been started or will be underway within the near future.

Midland Oil Company is to commence within the next several weeks on its deep test just northeast of Amerada's Navarro sand production. The well likely will be carried to the Edwards lime.

Father northeast, W. D. Bacon et al's Burns ranch 1 is a derrick. Another well is to be commenced within the vicinity of Moore, while still another is to be started just south of the town of Pearsall. Humble Oil & Refining Company is supposed to have made its location for a deep test to be drilled on a large block just north of the town of Pearsall.

EXPECT EXTENSION

Samfordyce east outpost test is promising

San Antonio.—Mundy and Stevens' F. B. Guerra 1, Tract 12, Porcion 41, about 2100 feet due north of the eastern edge of the Samfordyce field, Hidalgo County, is bottomed at 2890 feet and making test of a sand series topped at 2661 feet. It looks like an important extension to the Samfordyce field and the indication of considerable new potential producing territory.

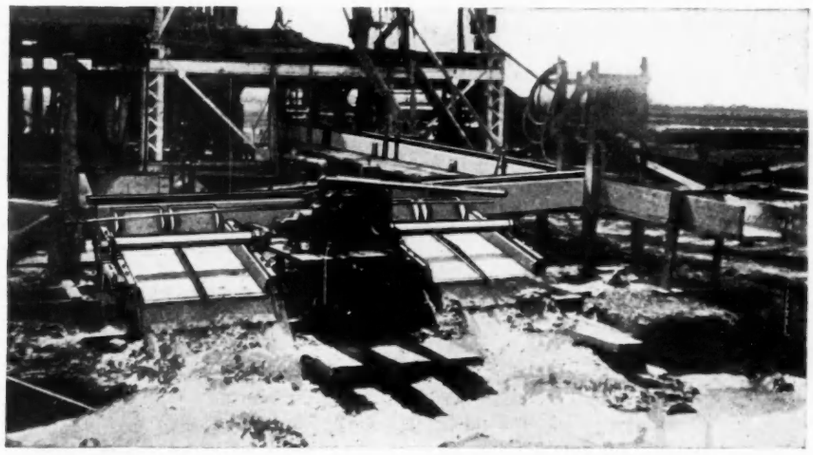
The well is on the northeast flank of the gas zone of the field and should it make an oil well, it may open a new flank producing zone on the northeast side of the gas dome similar to the present prolific one on the southeast side. The 85th well has been completed in the southeast flank of the zone in less than one year.

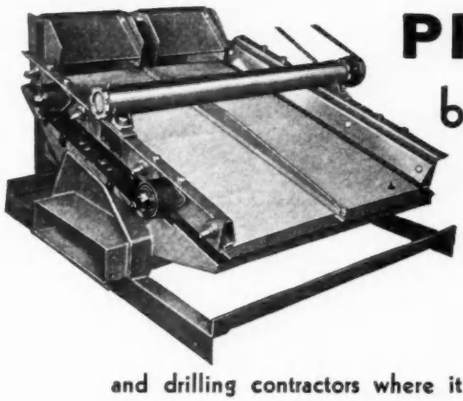
The Mundy and Stevens well cored gas sand at 2661-2701 feet, shale 2701-37 feet, gas sand 2737-40 feet and oil sand 2740-52 feet. Thin streaks of sand and shale were cored to the total depth. An electric formation testing device has been run and the results of this test will determine the manner of completion.

The field's main play now centers around the new west extension of the producing area in Starr County. Barnsdall Oil Corporation and Phillips Petroleum Corporation, Henshaw & Rotherts and Skelly Oil Corporation have commenced wells.

Hiriam Reed's Doyno & Chatfield, deep test being drilled just 1600 feet west of production in the Rio Grande City field of Starr County, had reached 3120 feet with nothing showing.

Sioux & Heard's Goodrich 2 is a new completion in the field, pumping about 75 barrels per day from 1343-56 feet. W. W. Zimmerman has set casing on sand at 1454-58 feet in Frank Doyno 2, just north of production.





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WILDCAT GAS WELL

Four miles southwest of Caesar field completed

San Antonio.—Francis P. Hynes et al's Theo. M. Plummer 1-A, wildcat four miles southwest of the Caeser field in Bee County, has been definitely completed as a large gasser in the Pettus sand at 2975-88 feet, elevation 356 feet derrick floor. It showed a closed-in pressure of 1225 pounds. It is estimated at upward of 30,000,000 cubic feet of gas per day, open flow, some estimates being much higher.

When the drill stem test was made, it showed a little oil in the tool, but the high pressure prevented it producing any oil after actually being completed. It now appears that this structure is quite similar to the Caeser field with the heavy gas atop the structure and a sharp decline off the peak of the dome showing an oil. While no locations have been announced, it is expected that additional exploratory work will follow in the near future.

This new well is located 990 feet from the south line and 300 feet from the west line of Section 33, Theo. M. Plummer subdivision, Chessman survey.

G. M. Church's J. C. Woods 1, wildcat three miles southeast of Beeville, also in Bee County, finally got liner on bottom at 5814 feet. It is shut down temporarily, but will resume within a few days to be cored deeper into the sand section topped at 5810 feet, and which threatened to blow out. This well is believed to be in the Conroe sand at this level.

Live Oak Active

Two more wells in the North Lucas field of Live Oak County are nearing the producing level. They are Houston Oil Company's Grant Frederick 3, southwest of the discovery, now making hole below 4800 feet and Smith and Story's Dinero Townsite 1-A, northeast of the discovery, drilling below 5000 feet.

Houston Oil Company is about ready to start drilling Frederick 2, Frederick 1, which showed two joints of salt water at 5216-27 feet, is now making hole below 5400 feet.

Mills Bennett's discovery well of a new field several miles north of Dinero was gauged again late in the week, showing 157 barrels of fluid, four percent salt water through 3/16-inch choke in 24 hours. It has a tubing pressure of 675 pounds and casing pressure of 1650 pounds. The salt water fluctuates up to seven percent, but declines when allowed to flow continuously for a sufficient period on small choke.

J. O. Whittington has made tentative location for his third well on the Little tract, where he recently completed an oil producer to open a new field. The well is located 1650 feet from the southeast line and 1980 feet from the southwest line of the M. M. Shipp survey, 1500 feet southwest of Little 2, the discovery well.

Houston.—There were 30 completions in the Texas Gulf Coast area during the past week. Of the 30 completions 21 resulted in flowing and pumping wells with an initial production of 7435 barrels daily. There were eight failures in the area along with one gas well, which was completed in the Tomball field, Harris County.

Lake Charles.—Completions in South Louisiana for the past seven-day period included five failures and four producers. The daily initial production for the four producers was 3766 barrels daily.

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SOUTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BEE COUNTY—		
F. P. Hynes et al, T. M. Plummer 1-A, 990 ft sl, 330 ft wl, sw portion sec 33, Chessman sur (opens new field 4 mi sw Caeser field)	¶30	2988
DUVAL COUNTY—		
Atlantic Oil Prod. Co., Wood Welder 1, nw ne sec 385 (Seven Sisters)	2208	2517
Claud Hammil, Hahl 1, sec 78 (Loma Novio)	600	2660
L & R Oil Co. (Russ), C. W. Hahl 3-D, ne ne sec 64 (Loma Novio)	†25	2540
Magnolia, Herbst 3, sec 70 (Loma Novio) pb 2761 ft	20	3516
S. Benavides 9, blk 8, sec 174 (Cole)	600	2840
Duval County Ranch Co. 1, se cor sec 100 (opens new field 1½ mi nw Gov't Wells)	425	2139
C. W. Hahl 3-B, sw nw ne sec 76 (Loma Novio)	840	2661
Santa Clara Oil Co., Wood Welder 13, se nw sec 385 (Seven Sisters)	1440	2490
Shell, M. C. Hubbard 4, sec 77 (Loma Novio)	240	2777
Stanolind, Ira G. Yates 1, 330 ft nl, 1230 ft wl of sec 416 (established oil production in Labbe area)	125	2465
Stieren Oil Corp., Wright et al 5, sec 72 (Loma Novio)	240	2709
HIDALGO COUNTY—		
Ralph E. Fair, Inc. (King Woods) Lawrence 6, tr 274, por 39 (Samfordyce)	250	2780
W. F. Lacy, Seabury et al 2, tr 256, por 38 (Samfordyce)	150	2790
KARNES COUNTY—		
Begol Oil Corp., Mrs. R. A. McKinney 7, S. Morris sur (N. Pettus)	150	3671
LIVE OAK COUNTY—		
George R. Pinkley, L. Jacob Corp. 1, se sec 3, GH&H sur	*	1259
MEDINA COUNTY—		
Caroco Oil Co., R. Taylor 1, A. Brushet sur, (Taylor)	*	30
Joe Duepree, Hugo Batot 1, John Ball sur No. 1478 (Taylor)	*	795
REFUGIO COUNTY—		
Atlantic Oil Prod. Co. & Stanolind O&G Co., J. J. O'Brien 7-A, Ximinez sur (Greta)	*	5924
Pearson Properties, Inc., Ryalls 2-B, Refugio Town Tracts (Refugio)	*	5388
Quintana Pet. Corp., Tom O'Connor 15-A, Swisher sur No. 4 (Tom O'Connor field) pb & perf 5740-5854	350	8174
SAN PATRICIO COUNTY—		
Heep Oil Corp., E. H. Welder 1-F, sec 46 (Plymouth)	500	5646
STARR COUNTY—		
Terry Hornaday, Doyno & Chatfield 1, blk 4, tr 21, por 80 (Rio Grande City)	*	1449
A. Nix et al, S.C.C.C. 1, blk 56, JL sub, por 89 (Barbacoas)	*	2830
Sioux & Heard, Goodrich 2, blk 5, tr 5, por 81 (Rio Grande City)	75	1356
TRAVIS COUNTY—		
R. C. Hill, S. A. Johnson 1, 308 ft nl, 1470 ft el of 80-ac tr, John Hahn sur	*	1100
Swearingen & White, E. Carlson 1, 460 ft nel, 1188 ft sel of tr in R. Fletcher sur	*	1450
VICTORIA COUNTY—		
Cox & Reed, E. B. Terrell 1, R. Manchola Gr (Coleto Creek)	*	2905
Gillespie & Superior, Brandt 2, blk 11, Rupley sur (Placedo)	45	4745
E. L. Smith & Gulf Prod. Co., M. Lala 1, lot 13, Rupley sur, (Placedo)	750	6011
WEBB COUNTY—		
Mills Bennett, F. Lopez 1, nw ne sw sec 724	*	3601
Magnolia, S. Benavides -3X, blk 253, Hale sub Arispe Gr (Cole)	400	2807
G. C. Mortimer, Jesus Lopez 1, sec 73, (Lopez)	350	2189
J. P. Nash, S. Benavides 3, blk 157, Hale sub, Arispe Gr (Cole)	*	3076
J. J. O'Hern, S. Benavides 1, blk 220, Hale sub, Arispe Gr (Cole)	1104	2763
WILLIAMSON COUNTY—		
S. W. Graham, Pfluger 1, 450 wl, and midway between nl and northern sl of 176-ac tr, Jordan sur	*	1040
ZAPATA COUNTY—		
Duke Phillips, L. Gutierrez 1, ne blk 26, La Huerta Gr	*	3205

*Failures; †Junked; ¶Million cu. ft. gas.

SAXET DEEP TEST

Spray of high gravity oil from 5792 feet

San Antonio.—A. F. Holliday's F. J. Smith 2-A, deep test in the Saxet field of Nueces County, was being completed late in the week, showing for a gasser spraying high gravity oil. It is in sand at 5788-92 feet, bottomed in sand.

The well is located in the west central portion of a 98.9-acre tract in the CEPI & N survey.

Another well in the general area holding considerable interest is Magnolia Petroleum Company's Baldwin 2, about 3000 feet southwest of the discovery well of the South Saxet or Baldwin field.

The above well made a drill stem test of the regular sand at 3948-52 feet, the result being 1250 feet of salt water and no pressure. It is going ahead to test the 4000-foot level.

LaJita Oil Corporation's Richard King Estate 1, se sw Section 22, King Ranch subdivision, in the King gas field, is the third important wildcat in the county giving promise of production. It passed through two high pressure gas sands at 3868-3906 feet and 3984-4010 feet, and has topped another sand at 4284 feet, which was being cored.

Three producers, one in the 4700-foot sand and two in the 4800-foot sand, were on the completion list, but none were gauged. Holliday et al's Hutchins and Stillwell 2 is in sand at 4871-76 feet. Holliday et al's F. J. Smith 2-B is in sand at 4720-24 feet, and Kepley Production Company's V. M. Donigan 2 is in the sand at 4867-70 feet.

Shreveport, La.—Twenty-two permits were issued by the Minerals division of the state department of conservation last week for new drilling operations in the state. Seven of the number were for North Louisiana, divided between parishes as follows: Caddo, five; Caldwell, one; and Sabine, one. The South Louisiana permits were divided as follows: Acadia Parish, two; Calcasieu Parish, five; Cameron Parish, one; Evangeline Parish, one; Iberia Parish, three; Jefferson Davis Parish, one; Rapides Parish, one, and St. Bernard Parish, one.

Placedo Extended

OVER MILE SOUTHWEST BY A GOOD 6000-FOOT WELL

San Antonio.—The 6000-foot sand of the Placedo field, Victoria County, was extended more than a mile to the southwest through completion of E. L. Smith Oil Company and Gulf Production Company's M. Lala 1, Lot 13, Rupley Survey. The well started flowing late September 1, and in three hours had produced 66 barrels of pipe line oil through a ¼-inch choke, showing tubing pressure of 1080 pounds and casing pressure of 800 pounds. The choke was changed to 3/16-inch and the well settled to 11 barrels of oil per hour with about the same pressures.

The well cored three feet of sand at 6008-11 feet, but casing was set at 6002 feet.

This is the second well to be completed in the discovery sand, all other tests thus far drilled in the field failing to find the sand, or testing salt water.

Eastern Texas Oil Company and Costa Oil Company's J. E. Schovajsa 1, Lot 14, a southeast offset to the above discovery, is rigging up to deepen from its present depth of 4789 feet. The well originally was completed as a gasser at 4760 feet through perforations. Reworked, it produced as a fair oil well at 4775 feet through perforations, but was not considered satisfactory, hence it is being carried to the lower sand.

Eastern Texas Oil Company is reworking another well in the field, being Henderson & Pickering 1, Block 19, which was abandoned at 6029 feet after failing to find the 6000-foot sand. It has casing set at 4806 feet, above which several attempts were made to complete through perforations. The hole has been reentered, plugged back to 4700 feet and drilled out to 4747 feet. It will be perforated at 4740-47 feet.

On the extreme southwest side of the field, Sun Oil Company's Marek 1, SA&NG Railway Survey 9, is in process of completion at 4777 feet. It cored sand with oil and gas show at 4762-66 feet, soft sand at 4766-71 feet, hard sandy shale 4771-74½ feet, sand showing oil and gas 4744½-77 feet. Drill stem test was made from 4757-77 feet, showing 18 joints of mud, oil and sand in 20 minutes through ¼-inch choke.

Gillespie and Superior Oil Company's Brandt 2, Block 11, is a new completion in the field, flowing two barrels per hour through ¼-inch choke and showing 1600 pounds working pressure. The completion was at 4734-45 feet.

Martex Oil Company is not having much luck in completing Mitchell 1, a plug back job from 6050 feet. It is testing above 5350 feet, having showed salt water at lower levels.

The joint test being drilled by The Texas Company, The California Company and Shell Petroleum Corporation about midway between the Coleta Creek and McFaddin fields showed a gas sand at 4488-4502 feet, which developed 275 pounds pressure in five minutes. It is now below 4550 feet. The well is J. J. Warden 1, in the Edward McDonough Survey.

UNUSUAL LAND BID

Offers may influence well spacing in Texas

Austin, Texas.—The State Land Office received bids September 4, on several tracts of submerged lands, most of which lie along the Texas Gulf Coast.

Competitive bidding has resulted in new features in most of the offers received during the past six months, and Humble Oil & Refining Company advanced one of the most unique plans in the bids just received.

In addition to the usual bonus and royalty, Humble Oil & Refining Company offered an oil payment to be derived from part of the gross production from "20-acre units."

Should contracts be awarded to them, it may be that the clause providing for 20-acre units would lead the Texas Railroad Commission to promulgate a spacing rule for the fields on that basis.

Bids received are listed below:

Calhoun County. Tract 9: Humble Oil & Refining Company bid $73.50 bonus and ⅛ royalty.

Tract 10; Tide Water Oil Company bid $85.68 bonus, ⅛ royalty, and $38,250 to be paid from ⅛ of ⅞ of the oil produced. Crown Central Petroleum Corporation bid $45.90 bonus, ¼ royalty on oil produced during the flowing life of the wells and 3/16 royalty on oil pumped, and ⅛ royalty on gas produced.

Chambers County. Tract 2, including 1540 acres; K. B. Yost bid $1663.20 bonus and ⅛ royalty.

Tract 3, including 1550 acres; K. B. Yost bid $1684.40 bonus and ⅛ royalty.

Tract 6, including 1530 acres; K. B. Yost bid $1652.40 bonus and ⅛ royalty.

Tract 7, including 1500 acres; Tide Water Oil Company, bid $3150 bonus, $37,500 from ⅛ of ⅞ of the oil, and ⅛ royalty.

Tract 10, including 1470 acres; Humble Oil & Refining Company, bid $14,700 bonus, ⅛ royalty, and $500 per acre to be paid out of 1/3 of the gross production from 20-acre units

Tract 11, including 1450 acres; Humble Oil & Refining Company, bid $14,500, ⅛ royalty and $500 per acre to be paid out of 1/3 of the gross production from 20-acre units.

Tract 12, including 1590 acres; Tide Water Oil Company, bid $8904 bonus and $39,750 to be paid out of ⅛ of ⅞ of the oil and ⅛ royalty. M. H. Reed bid $1669.50 and ⅛ royalty.

Tract 15, including 1350 acres; Tide Water Oil Company, bid $2835 bonus, ⅛ royalty, and $33,750 to be paid out of ⅛ of ⅞ of the oil. Frank T. Connor bid $1350 bonus, 5/32 royalty, and $76,000 to be paid out of ¼ of 27/32 of the oil. Humble Oil & Refining Company, bid $13,500 bonus, ⅛ royalty, and $500 per acre to be paid out of 1/3 of the gross production from 20-acre units.

Tract 18, including 1280 acres; F. T. Connor bid $2624 bonus, 3/16 royalty, and $51,000 to be paid out of ¼ of 13/16 of the gross production. Humble Oil & Refining Company, bid $12,800 bonus and $500 per acre to be paid out of 1/3 of the gross production on 20-acre units.

Tract 29, including 760 acres; M. H. Reed bid $798 bonus and ⅛ royalty.

Tract 32, including 670 acres; M. H. Reed bid $703.50 bonus and ⅛ royalty.

Tract 33, including 450 acres; M. H. Reed bid $472.50 bonus and ⅛ royalty.

Tract 34, including 370 acres; M. H. Reed bid $388.50 bonus and ⅛ royalty.

Tract 35, including 450 acres; M. H. Reed bid $472.50 bonus and ⅛ royalty. Stanolind Oil & Gas Company bid $2915 bonus, ⅛ royalty, and $11,660 from ¼ of ⅞ of the oil produced.

Tract 36, including 667 acres; M. H. Reed bid $703.50 and ⅛ royalty. The Texas Company bid $23,685.50 bonus, ⅛ royalty, and $43,550 to be paid out of ¼ of ⅞ of the production. Stanolind Oil & Gas Company bid $10,680 bonus, ⅛ royalty, and $24,920 to be paid out of ¼ of ⅞ of the gross production.

Titus County. Section 803, SF 1741, eight acres; J. W. Strong bid $10.40 and ⅛ royalty. J. C. Nelson bid $8.00 and ⅛ royalty.

Kimble County. Section 2, Cert. 40, including 13.2 acres; J. C. Nelson bid $13.20 and ⅛ royalty. J. D. Collett bid $133.20 and ⅛ royalty.

Starr and Zapata Counties. Section 435, Cert. 1189, including 371.1 acres; A. Cawthon bid $464 bonus and ⅛ royalty.

Anahuac Extended

WESTWARD; WILDCAT PLAY IN AREA IS INCREASING

WEEKLY STAFF REPORT

Houston.—Chambers County was attracting attention along the Texas Gulf Coast during the past week. With the Anahuac field being developed at a rapid pace and interesting wildcats being drilled or starting to be drilled, coupled with the exciting lease play around Cotton Lake, comprise the developments in this county, which makes it the most active area on the Gulf Coast.

C. B. Bunte's Simon 1, T. & N. O. Survey, Section 33, was drilling in shale below 6232 feet at the close of the week. No Discorbis was found down to 6085 feet. It was reported that a Discorbis marker had been found around 5919 feet, which made the well look high as compared to surrounding wells which had been drilled below that marker. However, the well will be drilled on down to the Frio sand which is productive in the Anahuac field located about six miles south of the wildcat.

Anahuac Field Extended

Humble Oil & Refining Company extended the Anahuac field three quarters of a mile to the west during the past week when Middleton 1-B was completed for an oil producer. The well made on the first 24-hour gauge 286 barrels of pipe line oil. The flow was through a quarter-inch choke, with 420 pounds pressure on the tubing and 1000 pounds on the casing. Seven-inch casing was set at 7084 feet, with the bottom of the hole at 7100 feet. The sand was topped at 7090 feet. The extension test topped the Discorbis at 6215 feet, Heterostegina 6315 and the Marginulina at 6700 feet. As compared to other producers in the field it is approximately 160 feet low.

Middleton 1-B is the furthest western producer. It is located 466 feet out of the southeast corner of the H. & T. C. Survey, Section 56. It is approximately two miles northeast of Turnbull & Irwin's Sudendorf 1, which cored over 253 feet of sand which carried salt water and was abandoned at 7637 feet. The latter well topped Discorbis at 6439 feet, Heterostegina 6810 and the Marginulina at 7172 feet.

To the east of this well, Humble Oil & Refining Company abandoned Clark 3 after testing salt water.

Sun Oil Company completed White 1 during the past week to make the second well completed in the north Anahuac area. Sun Oil Company's White 1 is a south offset to R. A. Mason and Glenn H. McCarthy's R. M. White 1, which extended the producing limits of the Anahuac field around three miles in a northerly direction some time ago. Sun Oil Company's White 1 made 39 barrels on the first hour gauge. The flow was through a quarter-inch choke with tubing pressure of 1000 pounds; casing pressure 1250 pounds.

Gulf Production Company's Knowles 1, west offset to R. A. Mason and Glenn H. McCarthy's R. M. White 1, was drilling down below 6385 feet at the close of the week after topping the Discorbis from 6099 to 6129 feet. The well should be down to the producing horizon the coming week end.

Glenn H. McCarthy has made location for J. E. Broussard 1, in the H. & T. C. Survey, Section 59. It is 843 feet south of the north line and 417 feet east of the west line of Section 59.

Cotton Lake Area

Salt Dome Oil Company has announced location for Lawrence 1, in the Cotton Lake area of Chambers County. It is 1913 feet south, 42 degress west from the northwest corner along the southwest line and 330 feet north and 48 degrees east from the southwest line of the Lawrence 344.6-acre tract in the Jas. Grant Survey.

The Cotton Lake area has been very active since the discovery of the Anahuac field. State of Texas offered leases in and around Cotton Lake. The leases went to Tide Water Oil Company and Humble Oil & Refining Company. The area has been the scene of extensive geophysical work, with several of the major and independent oil companies shooting the district.

This prospect was discovered in 1935 by Salt Dome Oil Company who worked it with reflection seismograph and torsion balance. Humble Oil & Refining Company later worked in the area with geophysical instruments. Gem Oil Company, Salt Dome Oil Company, Fohs Oil Company and Stanolind Oil & Gas Company are the principal lease holders. Stanolind Oil & Gas Company purchased royalty interest under approximately 1000 acres in the Ben Winfree Survey.

Salt Dome Oil Company is reported to have found a high in the Jas. Grant Survey, after working with geophysical instruments. It is reported that one of the major oil companies gave Salt Dome Oil Company $10,000 cash and $10,000 bottom-hole money for an interest in the Lawrence tract and obtained an option to work all the Salt Dome Oil Company's block and also an option to purchase an additional 1000 acres after working the area if it proved favorable. Humble Oil & Refining Company is reported to have purchased 2500 acres in Gem Oil Company's block at a reported consideration of $50 per acre. Fohs Oil Company is reported to have paid $36,000 for 400 acres in the area. Gulf Production Company is reported to have over 2000 acres in the area.

Turtle Bay Play

To the east of Cotton Lake and in the area of Turtle Bay, an exciting lease play has been in progress for some time and it is reported that a wildcat location is to be announced in the near future.

Salt Dome Oil Company has been working the area with torsion balance and several major companies have had reflection seismograph crews in the district.

The State of Texas asked for bids on state lands in and around Turtle Bay some time ago and have now leased the lands to one independent operator and three major oil companies.

Acreage in the area has been bringing from $40 to $65 per acre since the play started. One of the major oil companies bid $233,275 cash and $375,000 to be paid out of oil for around 3000 acres. The acreage sold for approximately $65 cash and over $100 out of oil. The major oil company worked in the area in December 1934.

The State of Texas asked for sealed bids on 47,000 acres being lots 1 to 40

GULF COAST Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANAHUAC—		
Humble, Middleton B-1	286	7100
Sun, R. M. White 1	936	7075
BARBERS HILL—		
Sun, Chambers 11	400	5464
Higgins 7	140	5090
BLUE RIDGE—		
Trans State Oil Co., Blakely 2	90	3176
BOLING—		
Brewster Tr., H. R. Farmer 2	30	3750
CLAY CREEK—		
Sun, Janner 16	*	1965
CONROE—		
Malta Oil Co., Texas Osage 11	562	5080
Strake Pet. Co., Schaffer 3	*	5089
Sun, Keystone Mills 16	792	5105
GOOSE CREEK—		
Margo Oil Co., Mitchell 1	*	3106
HASTINGS—		
Humble, Johnson 1	610	6100
Stanolind, Wooster 2	90	6120
Wooster 3	264	6100
HIGH ISLAND—		
Stanolind, Cade 47	500	6190
LIVINGSTON—		
Hawkeye Oil Co., Howard 4	380	4230
Humble, Grandbury 13	200	4330
MANVEL—		
Texas Co., C. P. Dawson 1	250	5645
Halligan 2	180	4032
Houston Oil Field Association 6	100	4010
MYKAWA—		
Alpha, Waggonhauser 1 (wo)	*	4552
PIERCE JUNCTION—		
Wright et al, Bender 1	360	4060
PORT NECHES—		
Texas Co., Polk 5-A	275	5915
THOMPSON—		
Humble, Gubbles 4	*	5389
TOMBALL—		
Humble, Hampel 3	¶2	5605
Pate 1	490	5561
Quilter B-9	500	5554
ANGELINA COUNTY—		
Lee Tex Oil Co., Thompson 1, W. W. Hales sur	*	2324
J. W. Stewart 1	*	2580
MONTGOMERY COUNTY—		
Donday Oil Co., Trice 1, Timothy Gude sur	*	4132

*Failures; †Junked; ¶Million cu. ft. gas.

inclusive or all Turtle Bay and northeast point of Galveston Bay, which extends south to the north line of J. K. Allen on the west side and J. W. Roberts on the east side.

Montgomery County

Turnbull & Irwin have made location for a wildcat to be drilled on the Carr tract in the C. Allen A-45 Survey. It is 330 feet west of the east line and south of the north line of the southwest 50 acres of a 200 acre tract. The well is located approximately midway between the Conroe field and the Tomball field, Harris County. At the close of the week the operators were clearing location to start moving in material.

Donday Oil Company's L. Trice 1, one mile southwest of Gholson Drilling Company's Parks 1, which made a small amount of gas and oil, Timothy Gude Survey, was abandoned during the past week at 4132 feet after testing salt water in the Cockfield formation. On a drill stem test from 3697 to 3762 feet the well made two fourbles of mud cut oil with a brackish taste. The test was made through a three sixteenths inch choke with a pressure of 75 pounds. The test was made in 19 minutes.

NEW OIL SAND
Is discovered in South Houston field

Houston.—A new producing horizon was discovered in the South Houston, Harris County, field during the past week when Stanolind Oil Company's Gibson 1, 1800 feet northeast of the discovery well, flowed from 4030 feet. September 6, 1935, the oil was turned into the tanks and it was still making a small amount of wash water. There was no gauge taken of production or pressure.

On a drill stem test from 4002 to 4020 feet the well showed 600 feet of oil in 14 minutes. The test was made through a quarter-inch choke on top and bottom. There was no pressure. The oil was 25.5 gravity. Seven-inch casing was set at 3994 feet.

This test is the third well for the South Houston field to show oil at different horizons. The other two wells now are drilling deeper in search of a new producing horizon.

Gibson 1 is located in the H.&T.B. Survey, No. 5, A-386, in the center of Lot 9, Block 41, drilling district 9.

It is reported Continental Oil Company paid $150 per acre cash and $350 per acre out of oil for 200 acres located on the west flank of the South Houston field. The acreage is located in the W. D. C. Harris Survey.

Hastings Field

Stanolind Oil & Gas Company completed two additional wells in the Hastings field during the past week. Wooster 2 was completed at 6120 feet. It made 32 barrels in 10 hours through a quarter-inch choke. Stanolind Oil & Gas Company's Wooster 3 was completed at 6100 feet. It made 264 barrels daily through a quarter-inch choke.

Stanolind Oil & Gas Company has made location for Kidd 2, 330 feet east of the most easterly west line and 416 feet south of the north line of a 58.4-acre tract in A.C.H.&B. Survey No. 2.

Humble Oil & Refining Company's Johnson 1, 1000 feet east of Stanolind Oil & Gas Company's Miller 1, A. C. H. & B. Survey No. 1, made 610 barrels per day from 6100 feet. The flow was through a quarter-inch choke with 900 pounds on the tubing and 925 pounds on the casing.

Dickinson Field

The Texas Railroad Commission issued an order on September 5, providing for 10-acre spacing in the Dickinson field, Galveston County. Wells may be drilled 330 feet from the lease or boundary line and 660 feet apart. Two strings of casing are required, with a minimum of 1200 feet of surface casing in drilling and completing wells in the field.

Fort Bend County

Thompson Drilling Company has made location for Brown 1. It is 150 feet out of the southwest corner of a 100-acre tract in the Geo. Menefee Survey. The well is located in the southeast corner of the county and west of Pilant Lake. The test is to be drilled 6000 feet unless commercial production is found at a lesser depth.

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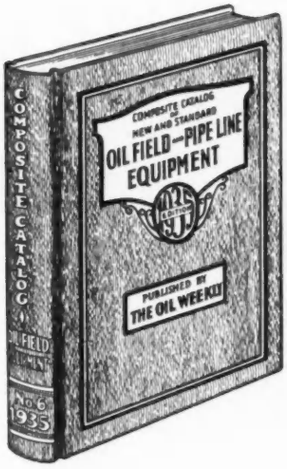

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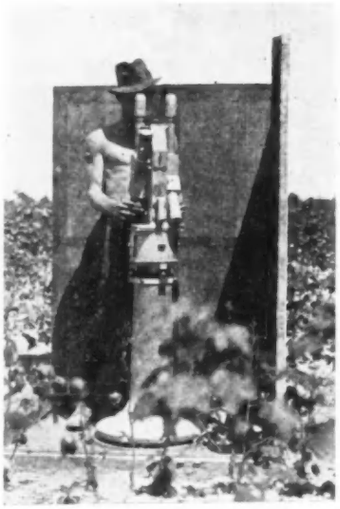

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Extend Lafitte

FIELD WITH 1800-BARREL FLOWING COMPLETION

Lake Charles.—The Lafitte field, Jefferson Parish, was extended 400 feet south during the past week when The Texas Compny completed its second well in the field for 1800 barrels of pipe line oil per day from 9568 feet.

The well was drilled to 9568 feet in sand showing oil. One foot and six inches of back pressure valve along with 84 feet and one inch of 70-mesh five-inch screen, 70 feet and nine inches of blank liner with nine feet and 10 inches of packer were set. Sixteen feet and nine inches of drill stem was set above the packer. Two and half-inch tubing was hung at 9292 feet. Seven and five eighths-inch casing was set at 9506 feet.

The well, Riglot Fur Trapping Company 1, came in at the rate of 1800 barrels daily through a 3/8-inch choke with 1580 pounds on the tubing. This well makes the second well to be completed in the area and is running about 40 feet higher than the discovery well.

It took The Texas Company only two months to spud in and complete it. It was spudded in June 28, 1935 and completed August 28, 1935.

The company's L. L. E. Bayou St. Denis 2 was waiting on cement to set at 9631 feet at the close of the week. The hole was drilled to 9640 feet. Sand showing oil was encountered from 9631 to 9649 feet. The well is running lower than the discovery well.

The name of the field has been changed from Bayou St. Denis field to Lafitte field. It is located approximately six miles south of Lafitte.

Tepetate Field

Continental Oil Company has made its third location in the new field in Acadia Parish. Welch 1 is located in the center of the S½ NW¼ NW¼ of Section 28-7s-2w.

The discovery well is making between 600 and 700 barrels per day through a 3/4-inch choke with a tubing pressure of 2800 pounds; casing pressure 3100 pounds. On September 2, 1935, on a shake out test the well made five tenths basic sediment and water. The well is not showing enough salt water to be alarming.

The oil is being carried from the field in trucks to Bordages on Bayou Mezpique. Upon the completion of a 4½-inch pipe line from the well to the terminal to be constructed at Millerville, four miles north of Jennings, the oil will be run through the line. It will be carried on barges to Port Arthur, Texas. The operators intend to operate the field with one well to 20 acres.

Roanoke Field

In the Roanoke field, Jefferson Davis Parish, Humble Oil & Refining Company's Thomas 1 was fishing at 10,583 feet at the close of the week. While installing a blowout preventer the seven-inch casing parted at the braden head and dropped three feet. The operators are trying to pull the casing up and reconnect it.

Humble Oil & Refining Company's Devilbiss 4 was abandoned at 9223 feet after failing to uncover anything of commercial value.

Shell Petroleum Corporation's Jarnigan 1, 660 feet east of the discovery well, was fishing for a stuck drill stem at 10,750 feet at the end of the week. The drill stem was lubricated with oil but the operators were unsuccessful in pulling.

Gillis and English Bayou Fields

In the Gillis and English Bayou field, Calcasieu Parish, Fohs Oil Company has made location for Castle 7. It is 600 feet north and 350 feet east of the southwest corner of the NW¼ SE¼ of Section 14-9s-8w.

Union Sulphur Company has made location for Barbe Estate 4. It is 329 feet west of the southeast corner of the NE¼ of Section 11-9s-8w. The same operator's Mayo Reeves 4 is located 950 feet west and 290 feet south of the northeast corner of the SW¼ NW¼ of Section 12-9s-8w.

South Lake Charles

Union Sulphur Company's Prairie Farm Land 1, south of Lake Charles, Section 1-11s-9w, was drilling in shale below 8150 feet at the close of the week after running an electrical logging device at 7616 feet which failed to show anything.

This well is being watched closely and if it fails to find production it will curtail drilling activity along this area. With Superior Oil Producing Company's Community 1, south of Baton Rouge, East Baton Rouge Parish, and Union Sulphur Company's Prairie Farm Land 1 looking disappointing, it makes the area appear less active than it would have had they shown something of commercial value.

SOUTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BOSCO—		
Superior, P. O. Hernandez 9	*	lcn.
Melancon 4	*	lcn.
EAST HACKBERRY—		
Texas Co., State E. Hackberry 14	*	5804
LAFITTE—		
Texas Co., Rigolet Cooperative Fur Trapping Co. 1	1800	9568
LEESVILLE—		
Texas Co., L. L. E. Leesville 35	1636	3455
PORT BARRE—		
Gulf, Wilson Cochrane 8	5	3225
ROANOKE—		
Humble, Devilbiss 4	*	9223
SULPHUR—		
Union Sulphur Co., Fee 812	325	4123
AVOYELLES PARISH—		
Southern Star Pet. Co., I. G. Boyette 1, sec 28-3n-5e	*	4510

*Failures; †Junked; ¶Million cu. ft. gas.

Two-Mile Extension

SECOND RODESSA OIL WELL FLOWS 11,000 BARRELS

WEEKLY STAFF REPORT

Shreveport.—Completion last week of Haynes Production Company's W. B. Lawton 1 as a large producer extended the Rodessa field two miles to the northeast and further emphasized the importance of the area. The second oil well came in with an initial production of more than 11,000 barrels daily through the casing, after it had produced at a 3500-barrel rate through tubing. Various chokes were used, but the flow through casing was most impressive.

Lawton 1 was turned into the tanks at 9:45 a. m. September 4, and at 7 a. m. September 5, had produced 3015 barrels of clean oil. The first production test was made through 2½-inch tubing with the casing closed. Casing pressure was 1050 pounds and the tubing pressure 250 pounds during most of the first day.

The well later was tested through the casing in an effort to establish a higher initial yield. The flow increased to about four times that recorded during the first test through tubing. From 12:15 p. m. to 7:15 p. m. of the same day, the well produced at the average rate of 525 barrels per hour through a two-inch choke on the casing and with the tubing closed.

During the 22-hour period ending at 7 a. m. September 6, the well flowed 10,027 barrels through a two-inch choke on the casing, with the tubing closed. Casing pressure was 200 pounds and tubing pressure 350 pounds.

Top of the producing section of the oolitic lime was encountered at 6015 feet in Lawton 1, and saturated lime was cored to bottom at 6052 feet. The lime has a porosity of 25 percent. Elevation of the well is 269 feet, which is 50 higher on total depth that the discovery well. Gravity of the oil is about 48 degrees, but gravity varies slightly with choke combinations.

Completion of Lawton 1 extends the field to a point about three-fourths of a mile north of the town of Rodessa and opens a large area to development. The extension checks closely with the producing trend indicated by a map on pages 26 and 27 of THE OIL WEEKLY of August 26.

It now looks as if the producing trend will sweep down two or three contour lines for a considerable distance, and there is little reason to doubt that the field will extend into Texas toward the southwest.

Leasing Again Increasing

As the result of completion of Lawton 1 as a large producer, leasing activity has increased again. It has been very difficult to obtain desirable leases at any reasonable price, since nearly 95 percent of the area was under lease when the field was discovered several weeks ago.

The Rodessa field now looms as one of the largest areas yet opened in Louisiana. With two large producing wells and no failures within acknowledged contour lines, the field must be recognized as a great potential producer.

Pelican Oil & Gasoline Company's Sexton 1, Section 14-23-16, is running casing after encountering oil in the lime between 5985 and 5995 feet, and between 6020 and 6035 feet. The well looks very promising.

The allowable of the discovery well, United Gas Public Service Company's I. L. Young 1, has been reduced to 1000 barrels until September 11, and from that date to October 11 will be allowed 1750 barrels daily. The well has been producing about 3200 barrels daily, but for the 24-hour period ending at 7 a. m. September 6 produced only its allowable of 1000 barrels. Casing pressure at the reduced production rate increased to 2100 pounds, and the tubing pressure climbed to 1100 pounds. During the 3200-barrel producing period, the casing pressure was 1350 pounds and the tubing pressure 900 pounds. The rapid climb of both the casing and tubing pressure after choking the well to a production of only 1000 barrels daily indicated that the formation has lost little of its original pressure.

Large supply companies have rushed into the Rodessa district with new warehouses and outlets, and the area has assumed the boom proportions expected of a field that looms as one of the largest found in some time.

Geophysical Work

Several companies are working as rapidly as possible in the Rodessa area, but have not yet succeeded in mapping the fault structure. Stanolind Oil & Gas Company has a reflection seismograph party in and near the Rodessa field, while a number of additional crews are working in the immediate area.

Cass County, Texas, has become very active from a geophysical standpoint, and a number of companies are concentrating on this area. Among the operators having at least one reflection seismograph or torsion balance crew in Cass County are The Texas Company, Stanolind Oil & Gas Company, the Torsion Balance Exploration Company and United Gas Public Service Company.

A number of geophysical crews are working in Claiborne Parish. Arkansas-Louisiana Gas Company has a crew working between the Shongaloo field, Webster Parish, and the Haynesville field, Claiborne Parish, while a crew directed by United Gas Public Service Company, Standard Oil Company of Louisiana and Triangle Drilling Company is working in Claiborne Parish.

NORTH LOUISIANA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BIENVILLE PARISH—		
M. V. Duncan et al, J. Miller 1, sw nw 9-18-7	*	2610
BOSSIER PARISH—		
Plain Dealing Syndicate, Dodson 1, sw se 25-23-13	*	3578
CADDO PARISH (Caddo)—		
Press & Lambert, Hughes 2, section 15-20-15	50	2200
The Texas Co., Thigpen 2, sec 15-20-15	*	2238
DE SOTO PARISH (Naborton)—		
W. K. Williams, Wemple 1, sec 15-12-11, (owdd)	¶4¼	2858
MOREHOUSE (Monroe)—		
Southern Carbon Co., Tensas Delta 16, sec 34-21-4e	¶9¾	2152
Carbon Consolidated, Harris 1, sec 17-20-5e	*	2530
OUACHITA PARISH (Monroe)—		
Carbon Consolidated, Feazel 3, sec 31-19-4e	¶2½	2178
SABINE PARISH (Many)—		
Ivan A. Allen, L. L. L. L. 1, sec 12-7-11	*	2670

*Failures; †Junked; ¶Million cu. ft. gas.

ARKANSAS STARTS

El Dorado, Ark.—Permits were issued last week in Arkansas for two new locations, one of which is a wildcat test. Benedum & Trees last week was issued permit for J. P. Holmes 1, NE SW 4-17-5, Ashley County. The well is on a block of 11,000 acres.

The other permit was issued for a new well in the Smackover field of Union County, Lion Oil & Refining Company's Hardy-Murphy 7, NE NW 9-16-15.

El Dorado, Ark.—Benedum & Trees Oil Company made location for Holmes 1, located in Section 4-17s-5w, in Ashley County, Arkansas. This block consists of 11,000 acres and was assigned the Benedum-Trees interests by C. E. Harris, conservation agent for the state of Arkansas, for a cash consideration of $10,500 and an overriding royalty. This is to be a 5000-foot test, and the location was made as the result of seismograph work.

Phillips Petroleum Company has a geophysical crew at work near El Dorado, and an additional crew working in Miller and Lafayette Counties. Tide Water Oil Company's reflection seismograph crew is still working in Hempstead County, Arkansas.

Jackson, Miss.—In the Benndale district, George County, Mississippi, S. P. Borden, drilling contractor, is drilling Gulf Refining Company's L. N. Dantzler Lumber Company et al No. 8, and has reached a depth of 1930 feet in chalk.

Monument Expanding

NEW AREA CROWDING HOBBS AS BIGGEST FIELD IN STATE

WEEKLY STAFF REPORT

Hobbs, N. M.—The Monument field gained ground the past week with its threat of surpassing the Hobbs field as the most important oil producing area in New Mexico with the completion of Amerada Petroleum Corporation's H. F. Andrews 1, C NW NW 12-20s-36e, situated one mile south of the discovery well and nearest production, with a rated potential of 15,492 barrels of oil and 14,500,000 cubic feet of gas. The prolific flow was largely attributed to the injection of acid in the porous limestone formation, which was logged in two separate but closely related zones between 3810 and 3901 feet. The hole is bottomed at a sub-sea depth of 325 feet, or approximately 39 feet above the assumed water table. The field has seven producers, all flowing, and is destined to become the most active drilling center in Lea County indefinitely.

Without the aid of acid for stimulating production, wells in the Monument area are of small caliber and in some instances would not be rated as commercial producers. Amerada Petroleum Corporation's Andrews 1 tested 30 barrels natural in upper pay at 3829 feet. It responded to treatment with 2000 gallons of acid with a flow of 508 barrels of oil in 22 hours, accompanied by 6,000,000 cubic feet of gas daily. The well was deepened to 3901 feet, and flowed 30 barrels hourly through tubing, with packer installed at 3829 feet so as to cut off upper pay in treating with 500 gallons followed by 3000 gallons of acid solution. Tubing was lifted to partially dislodge packer so as to include the first oil zone in taking a potential gauge. The well responded September 5 with a flow of 671 barrels pipe line oil the first hour and 620 barrels the second hour, flowing through open three-inch tubing and a three-inch line on seven-inch casing, which was cemented at 3770 feet. Available tankage was filled and the well shut in, as it will not be eligible for a proration quota until the mid-September period.

More than a score of progressive offsets will be drilled to the east and west of this big producer, owing to the operators abiding by a spacing of one well to 40 acres, and at the center of the unit. The Texas Company is building road to drill a north offset, while Amerada Petroleum Corporation is to offset its well to the east. Barnsdall Oil Company has started operations on Alaska Cooper 1, C NE NE 12-20s-36e, or three locations to the east. In the meantime Jeffers Oil Company's Britt-Conoco 1, C SE NW 7-20s-37e, situated about 1½ miles east by south of the big well, is registering a favorable structural position in drilling below the 2700-foot level. The latter logged base of salt at 2270 feet, or 1284 feet above sea level, while Andrews 1 passed out of the salt section at 2278 feet, or plus 1298 feet. Unless hindered by absence of porosity in the lime section Britt-Conoco 1 is conceded to make an oil producer. It is drilling with cable tools. Sun Oil Company's Maveety 2, west outpost location, was awaiting results of acid treatment at 3936 feet, or 334 feet sub-sea, and rig has been skidded to drill Maveety 3, C SE NE 35-19s-36e. The three active tests offsetting the single producer in the northeast section of the field were slated to reach the final casing point during the week.

Areas May Join

Extension given the Monument field on the south and recent advance of production in the Eunice field to the north in a direct trend toward the former area has given rise for belief among operators that the two major sources of production may be eventually linked. R. Olsen, Oklahoma City, and associates' State 1, C NW SE 5-21s-36e, second well on the north line of production in the Eunice field, was completed last week flowing 30 barrels hourly natural, with gas yield rated at 2,000,000 cubic feet daily from lime at 3820-73 feet. The hole is bottomed at a sub-sea depth of 286 feet. There are no dry holes to condemn the acreage situated directly between the two fields.

Absence of normal porosity in the lime zone held down the crude yield of the two new wells in process of completion in the south portion of the Eunice field. Texas Pacific Coal & Oil Company's State 1, Lease 2, C SE SW 9-22s-36e, was awaiting orders after developing into a big gasser with spray of high gravity crude, or distillate, following injection of 3000 gallons of acid at 3835 feet, or 268 feet sub-sea. The well was rated at 25,000,000 cubic feet of gas daily, flowing through three-inch tubing and carrying 1000 pounds back pressure. The connections freeze up within a few hours when the well is produced. Ohio Oil Company's State-Maxwell 1, south offset, made 20 barrels hourly, with very little gas, from lime at 3860 feet, or 287 feet, sub-sea, after three injections of acid, aggregating 11,000 gallons of solution. Sun Oil Company's H. S. Record 1, C NW NW 22-22s-36e, southernmost location, has drilled to 3550 feet, and is checking low on structure. Top of lime was called at 3030 feet.

Humble Oil & Refining Company's Mosley 2, C NW SE 10-24s-36e, an inside location in the north portion of the Cooper field, encountered an unusual situation through having failed to show oil or gas on five separate drill stem tests made in drilling from 3500 to 3631 feet. The hole was carried to 3641 feet, or 245 feet sub-sea, and formation tester used at 3550-3641 feet yielded 2700 feet of fluid. Field reports did not indicate if sulphur water was present. Phillips Petroleum Company's Woolworth 1, Group 3, situated a short distance north of nearest production in the North Jal area, showed only a scum of dead oil on drill stem test at 3350-3393 feet, the projected producing horizon. The hole was carried to 3407 feet, or minus 220 feet, where operations were halted to cement seven-inch pipe at 3040 feet.

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Big Medicine Bow

TEST PROJECTED TO LOWER BENCH OF SUNDANCE SAND

ROCKY MOUNTAIN FIELDS

WEEKLY STAFF REPORT

Casper, Wyo.—An important test on the southwestern flank of the Big Medicine Bow structure and 3½ miles southwest of the discovery well, which last May came in flowing 6360 barrels of 63 gravity crude and 80,000,000 cubic feet of wet gas daily, was announced this week. John J. Harden of Oklahoma City has spotted Garretson 1, SE SE SE 10-20n-79w, Carbon County, which will drill to the lower Sundance. The well is located between the 4500-foot and the 5000-foot contours according to present mapping of the structure. In the event of developing commercial production, the well will bring in approximately 3000 acres of land into proved classification.

The discovery well, Kyle 1, NE SE NE 23-31n-79w, joint with Ohio Oil Company and The California Company, developed gas production in the first Sundance between 5151-5222 feet and high gravity crude oil in the second Sundance at 5299-5393 feet with hole still bottomed in the producing formation. Below the second bench exists the probability of a third Sundance horizon, which has proved most prolific of the three Sundance strata in other Wyoming fields. The same operators are spudding Union Pacific 1, Account 1, NE SW SW 25-21n-79w, and are drilling at 3000 in State 2, C NW NW 36-21n-79w.

Rock River

Ohio Oil Company's Diamond Cattle 4, SW NW 35-20n-6w, Rock River field, Carbon County, is testing production in the Morrison formation with hole plugged back to 3235 feet. The well, an old Dakota producer, encountered water in the Sundance at 3537 feet. The 6¼-inch liner is set at 3193 feet.

Shirley Wyoming Oil Company late this week announced location for Quealy 1, NW NE 21-36n-80w. The well is a wildcat test through the Sundance on the Shirley Hills structure, Carbon County. It will be drilled on land assembled by the late Mahon Quealy, former official of Producers & Refiners Corporation.

Lance Creek

Ohio Oil Company's Carrie Putnam 4, SW SW 33-36n-65w, topped the Sundance at 3736 feet and is coring in the formation at 3777 feet due for the next completion in the Lance Creek field, Niobrara County, eastern Wyoming. The well found the Sundance approximately 100 feet lower than other Sundance wells at Lance Creek and is running true to geological data on the field.

Contrary to preliminary announcement, Huber Oil Company's Jose 1, NEc Section 6-35n-65w, spudding, will be carried to the third Sundance and will not complete in upper horizons as a gasser. The well is an outside location of the southeastern flank of the Sundance area and will be watched with considerable interest. It will drill with rotary equipment.

Continental Oil Company's Otto Rohlff 5, C SE SE 31-36n-65w, is drilling at 2233 feet. Black Hills Refining Company's Wyrick 1, SW NE 28-36n-64w, projected test through the Sundance on the east end of the Lance Creek field, has derrick up and is awaiting rotary, which is being freighted in from California.

Big Horn County

Peay Oil Company is rigging up cable tools for a second well on the south fault block of the Garland field, Peay 2, SE SE SE 10-55n-97w, Big Horn County.

A second start in the Garland field, is Paul Stock's Allen 1, Lot 52, Section 33-56n-97w, drilling for the account of Yale Oil Company. It is spudding with rotary.

Joan Oil Company's Howell 1, NEc NW NE 3-55n-97w, Garland, is drilling at 720 feet. Peter Evanoff's McAllister 1, SEc Section 4-56n-97w, is drilling at 1410 feet. Ohio Oil Company's P. G. Sessions 3, NWc Section 33-56n-97w, is cementing 12½-inch surface string at 591 feet.

Ohio Oil Company's Byron-Union 3, SE NE 22-56n-97w, Byron field, adjoining Garland, is drilling at 4816 feet in shale and has about 400 feet of hole ahead before reaching the producing formations, the Embar and Tensleep.

Hot Springs County

Arlton & Doyle's Government 1, SW SW SE 29-48n-91w, Hidden Dome field, Washakie County, Hot Springs Basin, Wyo., is drilling at 150 feet. Nystrom & Smoot's State-Muriad 2, NE NE 36-48n-97w, same field, is nearing the completion level, drilling below 1400 feet.

In the Hamilton Dome field, Argo Oil Company's Rathvon-Government 1, NE SW NW 14-44n-98w, is drilling at 1200 feet. On Waugh Dome, California Exploration Company's Government 2, W½ SW NW 7-44n-96w, is shut down waiting for water at 2518 feet.

MOUNTAIN STATES

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTANA		
GLACIER COUNTY (Cut Bank)—		
Santa Rita O&G Co., Stahl 1, cne se 20-33n-5w	250	3002
Savage 1, cne sw 9-33n-5w	60	2864
Olive Oil Co., Winkler 4, cn½ n½ 35-35n-6w	175	2910
Texas Co., Small 1, cnw ne 23-35n-6w	30	2845
R. C. Tarrant, McClellan 2, cnw se 12-34n-6w	80	2773
TOOLE COUNTY (Kevin-Sunburst)—		
A. Beardslee, S. Swears 3, ne se nw 9-35n-2w	40	1667
New Era Fuel Co., Halter 1, nw se 21-35n-2w	3	1530
Graham Oil Co., Government 3, e½ se sw 19-35n-2w	40	1529
Imperial Craig Oil Co., Martin 1, se 18-35n-1w	40	1660
TOOLE COUNTY (South Devon)—		
Fraser & Kluth's Severance 1, cse ne 29-32n-2e	*	1645
STILLWATER COUNTY (Dean Dome)—		
Continental, Orr 1, sw nw se 18-5s-17e	*	3970
NEW MEXICO		
LEA COUNTY (Cooper Field)—		
Conoco & California Co., D. L. Vaughan 3-A-14, c sw nw 14-24s-36e	1500	3535
Phillips Pet. Co.-Pure, Woolworth 16, c ne se 27-24s-36e	1500	3483
LEA COUNTY (Eunice Field)—		
Gypsy, A. F. Houston 2, c ne se 7-21s-36e	368	3886
R. Olsen et al, State 1, c nw se 5-21s-36e	750	3873
Repollo Oil Co., E. C. Adkins 3, swc sw se 9-21s-36e	1500	3915
LEA COUNTY (Hobbs Field)—		
Amerada & Skelly, State 2-E, nec e½ nw¼ 24-18s-37e	1747	4105
LEA COUNTY (Monument Field)—		
Amerada, H. F. Andrews 1, c nw nw 12-20s-36e	15,400	3901

*Failures; †Junked; ‡Million cu. ft. gas.

MONTANA

Cut Bank and Kevin tied in week's results

Cut Bank, Mont.—Five wells completed and three tests started in the Cut Bank field, Glacier County, northern Montana, this week. Santa Rita Oil & Gas Company's Stahl 1, C NE SE 20-33n-5w, swabbed in for 250 barrels in the first 14 hours. The well is in the prolific south sector of the field, a southeast offset to Montana Power Gas Company's Neil 1. It had 20 feet of producing sand topped at 2976 feet, and hole was carried to 3002 feet in the Ellis.

Another southern test which made a smaller well was Santa Rita Oil & Gas Company's Savage 1, C NE SW 9-33n-5w, when it pumped 60 barrels initial. Hole bottoms at 2864 feet. It had 10,000,000 cubic feet of gas at 2830-55 feet and the oil pay at 2855-63 feet.

Olive Oil Company's Winkler 4, C N½ N½ 35-35n-6w, completed for 175 barrels initial swabbing. Hole bottoms at 2910 feet.

The Texas Company completed Small 1, C NW NE 23-35n-6w, for 30 barrels daily on the pump with total depth at 2845 feet.

R. C. Tarrant's McClellan 2, C NW SE 12-34n-6w, swabbed in for 80 barrels initial with total depth at 2773 feet.

Three new locations were released with operators starting to move in ma-

terial. The new tests are: Fowler et al's Tweedy 1, SW SE SE 25-33n-6w, Montana Power Gas Company's Reggan 1, C NL NE SW 28-35n-5w, and the Santa Rita Oil & Gas Company's McCabe-Government 2, Lot 3, 32-33n-5w.

Kevin-Sunburst

In the Kevin-Sunburst field, Toole County, five wells completed, three were near completions and three new locations were released.

Coolidge & Coolidge's Government 2, SW NE SE 35-36n-2w, is swabbing 186 barrels daily. This was carried in last week's report as a completion at 50 barrels daily in the Sunburst sand with total depth at 1505 feet.

A. Beardslee's S. Swears 3, NE SE NW 9-35n-2w, completed for 40 barrels daily initial at 1667 feet.

New Era Fuel Company completed, for two to three barrels daily, Halter 1, NW SE 21-35n-2w, in the Sunburst sand at 1530 feet.

Graham Oil Company's Government 3, E½ SE SW 19-35n-2w, completed making 40 barrels daily at 1529 feet.

Imperial Craig Oil Company's Martin 1, SE 18-35n-1w, completed for 40 barrels natural at 1660 feet.

P. L. Eddy has a near completion in Seabrook 5, NE SW SW 19-35n-2w, acidizing at 1523 feet with total depth at 1565 feet.

A. E. Crumley's Shaw 6, SW NW SE 35-36n-2w, is estimated to be a 20-barrel well at 1597 feet.

Cassidy & Cassidy are drilling deeper in Vetich 1, SE SE 31-35n-2w, at 1340 feet.

Three new locations released were: M. P. F.'s McGowan Permit 7, SE SE SE 8-35n-2w, rigging up; Pfabe & Engleking's Government 9, NW SW SE 19-35n-2w, rigging up; and Crumley's Shaw 7, NE NE SE 35-36n-2w, location.

A deep test to 6000 feet to thoroughly test all lower formations in the Cedar Creek (Baker-Glendive) gas field, Fallon County, eastern Montana, started spudding this week. Montana-Dakota Utilities Company's Unit 1, NE NW Section 17-4n-6e, is located on the southern end of the 90-mile structure. Gas at Cedar Creek is developed in the Judith River series at around 1000 feet.

Daniels Petroleum Company's projected deep well, May 1, C SE SE 13-1s-33e, to untested lower formations in the shallow Hardin gas structure, Big Horn County, southern Montana, is drilling at 2250 feet.

COLORADO

Craig, Colo.—New field pumping equipment is being installed in the Iles field near here by Stanolind Oil & Gas Company at the estimated cost of $35,000. A. E. Keys of Casper has the contract for building two 10,000-barrel storage tanks, while O. C. Runstead, also of Casper, will install two new engines and pumps and construct the new pumping plant building. The crude will be flowed by field pressure and gravity to the pumping plant storage tanks.

The Texas Company is erecting an 80,000-barrel storage tank on its tank farm west of the refinery.

Basin Search Renewed

OIL IN NEW DISCOVERY DIFFERS FROM VENICE

WEEKLY STAFF REPORT

Los Angeles.—Republic Petroleum Company's No. 1, 15 miles southwest of Los Angeles, in Section 18-3s-14w, now is credited officially with being the discovery well on another deep oil field for the Los Angeles Basin area.

Repeated swabbing tests failed to obtain a steady flow so the well was placed on the pump on September 2 and is making about 400 barrels per day of 24.5 gravity oil, cutting approximately 14 percent fresh water.

There is a difference of opinion as to the origin of the water, most operators believing that the drilling water in the hole has not been exhausted, and others contending that the only possible source of such a large quantity of water is from the formation from which production is being obtained.

Total depth of this well is 7405 feet, with water shut-off at 7106 feet, where seven-inch casing is cemented, and 2½-inch tubing is hung at 6822 feet with a packer set at 6500 feet.

This well is producing from the same conglomerate body as the Del Rey Hills portion of the Venice field, four miles northwest, but gravity of the oil is about four to six degrees higher; thus tending to disprove possibility of connection between the two fields.

Spurred on by the discovery of oil in the conglomerate zone lying between the Nodular Shale and the schist formations in the Venice field and the Republic Petroleum Company's well in Section 18-3s-14w, many operators are casting about for similar structures on the west side of the Los Angeles Basin.

The latest project to start operations is Sovereign Oil Corporation's Ben Long 1, two miles east of the Lawndale field, in SWc Section 22-3s-14w.

This hole originally was drilled by Hancock Oil Company to 6069 feet and abandoned on September 20, 1929. It is understood that the new operators will salvage as much of the old hole as possible and carry the test on down to the schist.

Coastal District

Two new tests for the coastal district lying between Los Angeles and Ventura were reported last week.

Henry R. Dabney has spudded a well on Malibu Point, Section 32-1s-18w, Los Angeles County, 25 miles west of the city of Los Angeles. Drilling has been suspended temporarily while additional equipment is being installed, but is scheduled to resume immediately.

Raleigh P. Kimble has placed of record leases on approximately 600 acres four miles east of the town of Oxnard, Ventura County, centering around Section 6-1n-21w. No location for a well has been filed, although a test is expected to be drilled soon. It is understood that production is anticipated from a depth of approximately 3000 feet.

Yorbo Linda District

The Yorbo Linda district, one of the oldest producing districts of the Los Angeles Basin area, is to be tested again. Leaseholders Development Company recently has been organized to take over Midrich Drilling Company's Vejar 1, wildcat test in Section 26-3s-9w, 1½ miles east of the Richfield field.

Vejar 1 was drilled to 4056 feet and has been standing idle since October, 1934. New boilers are being installed, the rotary equipment reconditioned, and operators plan to resume drilling in the immediate future.

HUNTINGTON DEEP TEST

Los Angeles.—West American Oil Company is preparing to drill another deep test of the Huntington Beach field, Orange County.

Heavy foundations and cellar have already been completed and rig is being built, located at the northwest corner of Garfield and Westminster Avenue, in the Old Field portion of Huntington Beach.

Superior Oil Company drilled three wells to depths ranging from 7491 feet up to 9054 feet in this field in 1931, without encountering any sands that gave promise of commercial production.

GAS DEVELOPMENT

Los Angeles.—In line with the development of other gas reserves in the San Joaquin Valley area, The Texas Company is preparing to drill on its Whiting lease, located near the center of Section 8-28s-23e, in the Buttonwillow field.

The Texas Company's Sears 1, Section 6-28s-23e, was placed on production on August 28 from a depth of 2435 feet and made an initial production of 10,500,000 cubic feet of gas. Water string of nine-inch casing is cemented at 2330 feet. The well has been shut in and shows a pressure of 950 pounds.

The Buttonwillow gas field is five miles southwest from Semitropic field, where approximately 15 good gas wells have been placed on production within the past four months and where 15 additional wells are either drilling or preparing to spud.

NORTH BELRIDGE WELL

Flow of 5900 barrels best in state in recent weeks

Los Angeles.—Standard Oil Company completed McPhail 2 in the North Belridge field in Kern County for the best well in weeks in California. The hole was bottomed at 8501 feet in the deep zone and nine-inch casing was cemented at 7948 feet.

The well on a production test made 5900 barrels of 34 gravity oil, cut three percent, and 80,000,000 feet of gas. It was choked back to 800 barrels and the pressures built up to 2500 pounds on the tubing and 3100 pounds on the casing.

For the production test, liner was landed at 8496 feet and the flow is through 399 feet of perforated. The company is drilling McPhail 3 at 5044 feet and the last casing landed was 18⅝-inch at 850 feet.

Six other holes are drilling for the prolific deep zone at North Belridge, ranging from 5300 feet to 8000 feet in depth. Three of these are being drilled by Belridge Oil Company, one by Continental Oil Company and two by Union Oil Company. All are in Sections 35-27-20 and 36-27-20.

Belridge Oil Company's No. 32 has cemented nine-inch at 7973 feet with bottom close to 8000 feet and should be the next completion.

Belridge District

Continental Oil Company is preparing to abandon Layman 1, wildcat test of the Belridge district, five miles southwest of the North Belridge field, in Section 18-28s-20e, Kern County. This project was drilled to 1783 feet and penetrated approximately 80 feet of oil sand from 1484 feet to bottom. Most California operators thought that another shallow field had been discovered but subsequent tests failed to show oil in commercial quantities, although tests were made from 720 feet, where the well is now standing plugged, to 1575 feet, where the hole was plugged to shut off doubtful looking formations prior to the initial production tests.

Lost Hills

Standard Oil Company is preparing to make a formation tester run in United 1, wildcat project located about two miles northwest of the Lost Hills field, in Section 2-26s-20e. Total depth is 5800 feet and the formation tester will be set at 5765 feet. Top of the Eocene sand was encountered at 5779 feet and was oil-stained and gave a fair cut.

This formation is thought to correlate with the "64" zone in the North Belridge field, 10 miles south, from which numerous wells have been completed within the past five years for initial production ranging from 1500 to 5000 barrels per day.

Kettleman Hills

Standard Oil Company is preparing to complete its second well, No. 38-29V, Section 19-21s-17w, on the Middle Dome at Kettleman Hills. Bottom of the well is at 7885 feet, with nine-inch casing cemented at 7595 feet and 343 feet of 4¾-inch liner, including 279 feet of perforations, is landed on bottom.

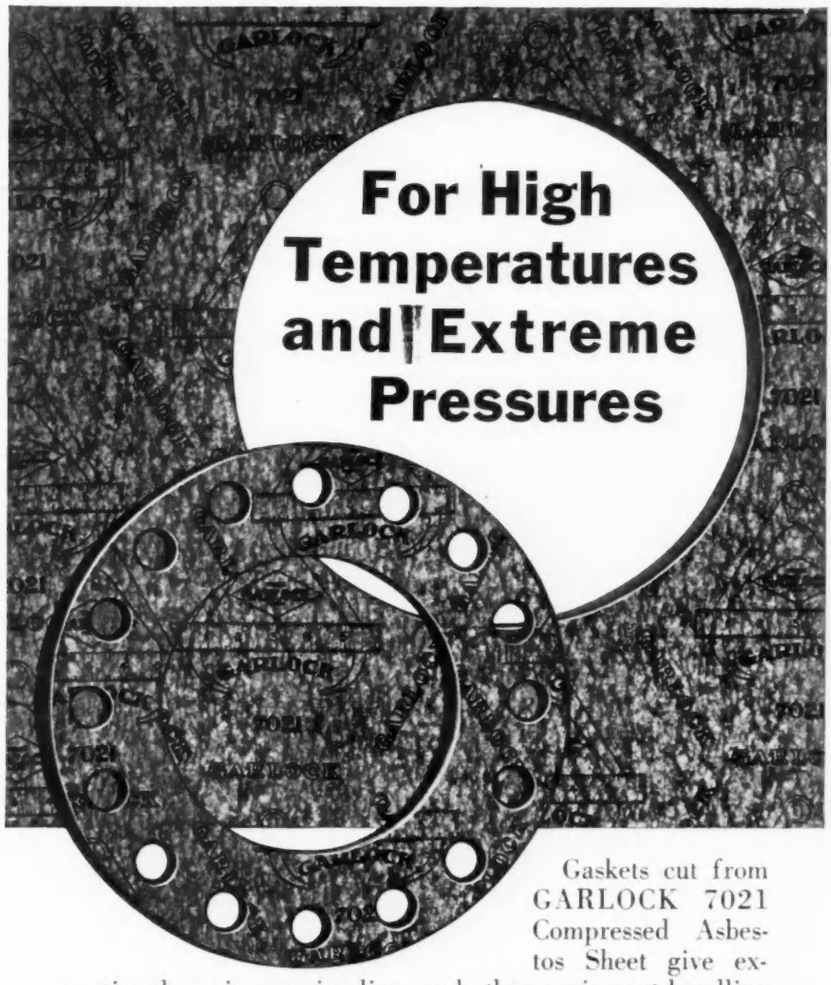
Standard Oil Company's first well on Middle Dome, No. 6-29V, located in the same section, has been shut in for some time but has a potential of 1345 barrels per day.

CALIFORNIA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
KETTLEMAN HILLS—		
Standard, No. 36-19J	3450	8800
BELRIDGE—		
Standard, McPhail 2	5900	8501
BUENA VISTA HILLS—		
Honolulu Oil Corp., No. 45	250	3680
BUTTONWILLOW—		
Texas Co., Sears 1	¶10.5	2435
KERN FRONT—		
Associated, No. 3	100	2610
C. C. M. Oil Co., No. 46	300	2159
Republic Pet. Co., Strassburger 4	625	2090
KERN RIVER—		
Kern River Oilfields, No. 4	340	2055
ROUND MOUNTAIN—		
Honolulu Oil Corp., No. 93	700	2215
ELWOOD—		
Pacific Western Oil Co., Permit 92-15	180	3740
KERN COUNTY —		
Reserve O&G Co., Tejon Ranch 3	*	1862
LONG BEACH—		
Capitol Inv. Co., No. 1	35	5540
DOMINGUEZ—		
Shell, Reyes 77	1500	4646
SANTA BARBARA COUNTY—		
Refugio Oil Co., Carreaga 1	*	1300

*Failures; †Junked; ¶Million cu. ft. gas.



Gaskets cut from GARLOCK 7021 Compressed Asbestos Sheet give exceptional service on pipe lines and other equipment handling gasoline, oil, gas or steam at high temperatures and extreme pressures. Tough, yet resilient—GARLOCK 7021 is particularly economical and efficient for severe conditions.

THE GARLOCK PACKING COMPANY, Palmyra, N. Y.
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GARLOCK 7021

Big Wells Extends

MONTCALM COUNTY LIME AREA GETS 250-BARREL FLOW

WEEKLY STAFF REPORT

Mt. Pleasant.—A definite northwest trend of a prolific lime producing horizon appeared established this week with Mammoth Petroleum Corporation's Strait 1, 11n-5w-se se se-34, Montcalm County initialing 250 barrels per hour from 3240 feet. The well is located a half-mile west of production but actually proves up a greater extension than indicated by the distance. The discovery well (10n-5w-11) is a mile south and a mile west. Part of the acreage between the two wells already has been proven but a larger part remains undeveloped.

Michigan operators saw the new strike as particularly significant in relation to a wide testing campaign being carried on, and contemplated, as far as three miles west of Strait 1. It was estimated that the well will precipitate from 20 to 40 new locations within a month.

Strait 1, picked up the Dundee lime at 3191 feet, showed gas at 3194 and oil at 3195-99 feet. At 3199 feet free oil was bailed, standing about 400 feet in the five-inch casing. Drillers estimated they made not more than one foot more when the well flowed. After cleaning with a two-hour open test averaging 225 to 200 barrels an hour operators pinched in to 60 barrels an hour against 385 pounds back pressure.

Isaiah Leebove, who heads Mammoth Petroleum Company, caused a sensation in Michigan six weeks ago when he paid a $50,000 cash bonus for the 160-acre Strait tract to Daily Crude Oil Company. It is the highest price of record involved in a Michigan lease deal.

Flush production in the Crystal-Ferris district was shot to approximately 50,000 barrels daily the past six days, marking the biggest week in the new field's history. Six other tests were completed with an aggregate open daily flow of 12,800 barrels, exclusive of Mammoth Oil Company's Strait 1. All were located in territory regarded as proven.

The field has been prorated on a basis of 40 percent above 200 barrels free oil since August 1, however, the Michigan Producer's Committee announced that stronger restrictions probably would be laid down early in September. Market demand at present approximates about 14,000 barrels daily.

Developments in the Millbrook-Belvidire gas district of Mecosta and Montcalm Counties also took on impetus this week with the completion of four tests ranging from five to 11 million feet daily from the Michigan Stray sand.

MICHIGAN

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MIDLAND COUNTY—		
Rex Oil & Gas Co., Mates 1, 13n-1w, ne ne se-22	50	3440
ISABELLA COUNTY—		
Atha Oil Co., Regan 2, 16n-4w, nw sw-25	*	1385
MONTCALM COUNTY—		
J. W. Leonard, Jr., West 3, 10n-5w, nw ne nw-11	4800	3191
Daily Crude Oil Co., Robins 2, 10n-5w, nw ne ne-3	1350	3186
Rex Oil & Gas Co., Durbin 1, 10n-5w, se sw se-2	100	3199
Townline Oil Co., Rule 1, 10n-5w, ne ne nw-2	1200	3184
Shell, Phillips 1, 10n-5w, sw ne sw-1	*	lcn.
T. F. Caldwell, Flint 2, 11n-5w, sw se sw-35	4200	3186
Daily Crude Oil Co., Flint 1, 11n-5w, se sw se-35	130	3185
Wiser Oil Co., Bright 1, 12n-7w, c ne nw-4	¶9½	1260
MECOSTA COUNTY—		
R. F. Ide, Bright 1, 13n-7w, c se sw-33	¶11	1261
D. F. Jones, Bissell 1, 13n-7w, c nw sw-32	¶7	1290
Bundy Hill Oil Co., Schuberg 1, 13n-7w, c sw nw-32	¶5	1289

*Failures; †Junked; ¶Million cu. ft. gas.

Mammoth Petroleum Corporation's Strait 1, Montcalm County, Michigan, flowing 250 barrels per hour.

EASTERN STATES

WEEKLY STAFF REPORT

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
PENNSYLVANIA		
WASHINGTON COUNTY—		
E. H. & J. B. Tafue Grim 2	4	861
GREENE COUNTY—		
Peoples Nat. Gas, King 1	¶	2219
Ira Donley, Donley 1	*	335
WEST VIRGINIA		
KANAWHA COUNTY—		
Columbia Carbon Co., Copenhaver 1	¶	4850
Yoak O&G Co., Goshorn 1	¶	4827
Godfrey L. Cabot, Levi 1	¶	....
BOONE COUNTY—		
Owens-Illinois Gas, Vandeline 1	¶	....
CALHOUN COUNTY—		
Massey & Jarvis, Massey & Jarvis 1	*	....
Mud Lick O&G, Bennington 3	¶	....
LINCOLN COUNTY—		
H. A. Waggoner, tr., May 1	¶	....
RITCHIE COUNTY—		
C. W. Athey & Co., Ball 2	*	....
ROANE COUNTY—		
D. W. Law & Co., Lyons 2	*	....
MONONGALIA COUNTY—		
Carnegie Nat. Gas, Cooke 1	¶	....
CENTRAL OHIO		
MEDINA COUNTY—		
Edson & Son, Miller 52	21	515
Wideman 7	*	543
Preston Oil Co., Grigsby 18	30	506
Ohio F.G. Co., Cleveland Trust 1	¶	710
ASHLAND COUNTY—		
McConnell & Co., McClure 5	¶	....
ATHENS COUNTY—		
Gibson & Co., Lucas & Co. 4	*	....
PUTNAM COUNTY—		
Brown & Co., Geirhart 2	15	1342
HARDIN COUNTY—		
Jupiter Oil Co., Matthews 3	1	1370
KNOX COUNTY—		
Upham Gas Co., McNabb 2	¶	3163
TUSCARAWAS COUNTY—		
James Upham, Uhlers 1	¶	4818
Federal O&G Co., Mathias 1	*	5014
GUERNSEY COUNTY—		
M. J. Purdy, Bates 1	¶	1830
M. P. Muhlback & Son, Stiles 1	*	1253
Barnesville Dev., Doudna 3	¶	1498
H. F. Muhlback, Stewart 11	¶	1343
ATHENS COUNTY—		
Ohio F.G. Co., Snodgrass 2	¶	1120
Carpenter & Glaizer, Smith 3	*	1451
A. D. Townsend, Bobo 1	*	1456
MEIGS COUNTY—		
Ohio F.G. Co., Singer 1	¶	1960
Rhodes 1	¶	1944
SOUTHEASTERN OHIO		
KNOX COUNTY—		
D. C. Highman & Co., Horn 1	1	770
NOBLE COUNTY—		
J. T. Roach & Co., Milhone 1	*	1451
Barnesville Dev., Stoneburner 1	*	1522
Home Realty Co., Spear 1	*	190
MONROE COUNTY—		
Charles Hogue & Co., West 1	5	1990
Gordon Green & Co., Leasure 2	¶	1006
WASHINGTON COUNTY—		
Pennington & Co., Ridgeway 7	¶	1661
D. T. Orndorf, Roe 6	*	1533
Harry Binegar, Moore 6	*	1940

*Failures; †Junked; ¶Million cu. ft. gas.

THE OIL WEEKLY REPORT ON IMPORTANT *Wildcat Tests*

ARKANSAS

ARKANSAS COUNTY—Grand Prairie Realty Co.'s Fischer 2, ne nw nw 6-6s-4w, dr 710 ft.

ASHLEY COUNTY — Benedum & Trees Holmes 1, ne sw 4-17-5, mir. Glen E. McFadden et al's Bovine Farms 1, ne ne 1-18-8w, sd 2798 ft. Texas Seaboard Oil Co.'s Fee 1, nw ne 28-17-4w, fishing ds 2500 ft.

CALHOUN COUNTY — The Hunter Co.'s Stout Lbr. Co. 1, nw se 33-16-13, fsh ds 3485 ft.

COLUMBIA COUNTY—J. G. Cubage's Rhea 1, sw se se 12-17-22, sd 3500 ft. Southern States Gas Co.'s Pinewoods Lbr. Co. 1, sw ne nw 10-20-22, sd 960 ft.

DALLAS COUNTY—J. D. McCall & J. C. Kelly's R. Owen 1, nw sw 26-10-16, spd.

HEMPSTEAD COUNTY—F. W. Martin's Lafferty 2, sc nw 17-14-27, dk.

LAFAYETTE COUNTY — Earl F. Fox's Coleman 2, ne ne 30-16-24, rur. W. H. Harvey et al's R. F. Allen 1, ne se sw 13-19-23, dk. Leach et al's Bodcaw Lbr. Co. 3, 20-16-23, lcn. S. H. Riggs et al's DuBose 1, se sw nw 35-16-24, cemented back to 2597 from 2817 ft. Transportation Pet. Co.'s Cochrane 1, ne se 25-19-25, dr 2000 ft. Red River Lbr. Co. 1, sw sw 26-19-25, sd 4450 ft. Joe Modisette et al's Frost Lbr. Co. 1, sw sw 29-19-24, ru.

MILLER COUNTY—L. H. Mahon et al's Miller L&T Co. 1, sw se 29-18-27, ru.

MONROE COUNTY — Beaver Pet. Co.'s Stinson 1, sw se sw 27-4n-2, dr 1300 ft.

OUACHITA COUNTY — Snow-Black Pet. Co.'s Jerry Bedford 1, sw sw 32-11-18, dr 1415 ft.

POINSETT COUNTY—Rockwell Dev. Co.'s Fee 1, 13-11n-3e, sd 740 ft.

UNION COUNTY—Mrs. R. K. Jones, J. Davis 1, nw nw 28-16-14, wo 3295 ft. Ohio Oil Co.'s Sam Oliver 2, nw sw sw 7-17-13, lcn. E. O. Olds Telford 1, nw nw 35-17-15, sd 2211 ft. Wallingsford & Cabb's Laney 1, 32-19-16, 10-in csg 175 ft, wo.

CALIFORNIA

KERN COUNTY

ARVIN—General's Mattson 1, 1-32-29, coring sand and shale 7595 ft.

BELRIDGE—Continental's Layman 1, 18-28-20, td 1783 ft, sand 1465-1556 ft, tested dry, to test upper zones.

BUENA VISTA LAKE—Ohio's K. C. L. A-2, 32-31-26, coring blue shale 5146 ft. Shell's B. V. A. 1, 9-32-25, coring blue shale 8742 ft.

BUTTONWILLOW—Texas Co.'s Whiting 1, 8-28-23, foundations.

COMANCHE POINT—Tejon Ridge Oil Co.'s No. 1, 23-32-29, dr sandy shale, sg 2060 ft.

EDISON—Bauer Oil Co.'s Bauer 1, 21-30-29, grade.

FAMOSA—Ausbrit Oil Corp.'s No. 1, 20-27-27, lcn.

GRAPEVINE—Silver Gate Co.'s Tejon 1, 7-10-19, dr brown shale 1960 ft.

GREENFIELD—United Explor. Co.'s Ricomini 1, 23-30-27, sd 3755 ft.

LOST HILLS—Standard's United 1, 2-26-20, coring blue shale 5821 ft.

McFARLAND—Republic Pet. Co.'s Long 1, 20-26-27, dr sandy clay 2232 ft. John H. Webb's Alta 1, 16-26-26, wocs 12¾-in at 782 ft, bottom.

McKITTRICK—Big McKittrick Oil Co.'s Wisecarver 1, 30-30-22, sd 275 ft.

SAN EMIDIO—Ohio's K. C. L. C-11-49, 11-11-22, coring sand and shale 2831 ft.

SO. BUTTONWILLOW—Jack Doyle's No. 1, 5-30-24, coring, sg 4920 ft.

SOUTH DOME—Continental's Gatchell 28-7, 7-25-20, td 7420 ft, wocs 5-in and 6⅝-in at 7350 ft.

TRICO—Standard's Bolz 1, 33-24-23, rig.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

• —*dry hole abandoned well.*	owdd —*old well drilling deeper.*
‡ —*salt water (completions.)*	owpb —*old well plugging back.*
† —*junked and abandoned.*	pb —*plugged back or plugging back.*
¶ —*million feet of gas.*	r —*reaming.*
abd —*abandoned.*	rog —*rig on the ground.*
bbls —*barrels.*	rur —*rigging up rotary tools.*
br —*building rig.*	rust —*rigging up standard tools.*
b.s. —*basic sediment.*	sd —*shut down.*
csg —*casing.*	sdtr —*sidetracking.*
co —*cleaning out.*	sg —*show gas.*
dd —*drilling deeper.*	si —*shut in.*
dk —*derrick.*	so —*show oil.*
dr —*drilling.*	so & g —*show oil and gas.*
fsg. —*fishing.*	spd —*spudding.*
ft —*feet.*	sr —*straight reaming.*
hfw —*hole full of water.*	sw —*salt water.*
in —*inches.*	td —*total depth.*
lcn —*location.*	ur —*underreaming.*
m —*milling.*	wih —*water in the hole.*
mim —*moving in materials.*	wo —*workover.*
mit —*moving in tools.*	wocs —*waiting on cement to set.*
mot —*milling on tools.*	wosr —*waiting on standard rig.*
n, s, e, w, —*north, south, east, west.*	
oih —*oil in hole.*	

MISCELLANEOUS

FRESNO COUNTY—Taft Well Dr. Co.'s Kreyanhagen 1, 33-22-16, coring sand so 4001 ft.

HUMBOLDT COUNTY—Texas Co.'s Eureka 1, 1-3-2, td 6133 ft, plug 5850 ft, sd, dr core hole.

SACRAMENTO COUNTY — Great American Pet. Co.'s Howard 1, 25-2-8, td 3041 ft, to test 2935 ft, to bottom.

SAN JOAQUIN COUNTY—Amerada's F. D. L. 1, 15-2-5, dr hard shale and streaks sand 7142 ft.

TEHAMA COUNTY — Northern Counties Pet. Co.'s Ewers-Mooney 1, 25-24-3, r td 4919 ft.

TULARE COUNTY—Pacific Explor. Corp's Castle 1, 17-21-27, sd 780 ft.

MONTEREY COUNTY—Shell's Branch 1, 34-24-10, dr black shale 4795 ft.

SANTA BARBARA COUNTY

EL CAPITAN—Refugio Oil Co.'s Carreaga 1, 31-5-30, abn 1300 ft.

GOLETA—Shell's Hollister 1, 10-4-29, dr hard gray sand 2976 ft.

LOMPOC—M. J. Freeman's La Brea 1, 11-7-33, dr shale 1250 ft. Lompoc Pet. Co.'s Beauterbough 2, 18-7-34, sd 3775 ft.

SANTA MARIA—Union's LeRoy 1, 16-10-34, td 905 ft, fsh.

VENTURA COUNTY

BARDSDALE—Union's Dryden 10, 12-3-20, dr hard shale 3872 ft.

FILLMORE—Texas Co.'s Unit Plan 2-1, 29-4-19, dr hard sand streaks shale 2520 ft.

HOPPER CANYON—Oil Ridge Oil Co.'s Moran 3, 1-4-19, sd 1685 ft.

LAS POSAS—Las Posas Pet. Co.'s Mahan 1, 22-3-20, swabbing 8120 ft.

OXNARD—General's McGrath 1, 26-2-23, dr sandy shale 5920 ft.

SHIELLS CANYON — Bankline Oil Co.'s Calumet B-1, 3-3-19, dr hard shale 1070 ft. Texas Co.'s Shiells 128, 4-3-19, td 7423 ft, plug 4408 ft.

SIMI—Jas. S. Hull's No. 1, 2-2-18, dr sand 550 ft. Paloma Oil Co.'s Paloma-Marr 1, 12-2-18, td 2650 ft, rep equip.

VENTURA—Ventura Explor. Co.'s Sexton 1, 30-3-22, coring hard shale 5077 ft.

SOUTHERN CALIFORNIA

ARTESIA—Vanco Dev. Co.'s Millard 1, 25-3-12, sd 5818 ft.

EL SEGUNDO—Larco Oil Co.'s Van 1, 12-3-15, dr sandy shale 5410 ft. Republic Pet. Co.'s No. 1, 18-3-14, td 7405 ft, set packer 6500 ft, ran tubing to 6822 ft, flowed by heads at 400 bbls rate, 28 gravity oil, to pump.

LAWNDALE—Sovereign Oil Corp.'s Ben Long 1, 22-3-14, bldg rig over old hole to redrill, td 6069 ft.

MALIBU—Henry R. Dabney's Malibu 1, 32-1-18, technical spud 8-26, rur.

PICO—Frontier Oil Co.'s No. 1, 12-2-12, td 4865 ft, hole caved, redr.

PICO CANYON—N. M. Frazer's No. 1, 31-4-16, dr hard sand 440 ft.

PUENTE—York Oil Co.'s Sentous 1, 2-2-10, lcn.

SAUGUS — International Oil Developers' Powell 2, 34-5-16, moving in rig from No. 1.

TOPANGA CANYON—Monarch Pet. Co.'s Sylvia Park 1, 5-1-16, dr 100 ft.

TORRANCE—Eyers Pet. Corp.'s No. 1, 20-4-13, rur.

SAN BERNARDINO COUNTY—Equitable Pet. Explor. Co.'s No. 1, 11-11-5, dr 610 ft; this well is in the desert. Hillman Long's Pellissier 1, 2-3-8, dr hard sand 937 ft.

COLORADO

ARCHULETA COUNTY—Wm. E. Hughes Estate's Fee 1, se 24-3n-2e, dr 1410 ft.

JACKSON COUNTY — Colorado Oil Ref. Co.'s North Park Coal 1, cnw nw 18-9n-78w, dr 1815 ft.

JEFFERSON COUNTY — Ruby Hill Oil Co.'s Braden 1, se se 24-4s-69w, dr 4250 ft.

MOFFAT COUNTY — Mid-Colorado Pet. Co.'s Ohmholt 1, nw ne 29-4n-87w, dr 2750 ft.

MONTEZUMA COUNTY—Coon & Teague's (McElmo Oil Co.), West 1, ne nw nw 31-36-17, dr 3167 ft.

PARK COUNTY — South Park Oil Co.'s State 1, se se sw 16-11s-17w, dr 3060 ft.

PROWERS COUNTY—Trojan O&G Co.'s Lotus 1, nw ne ne 15-23s-46w, dr 5371 ft.

KANSAS

BARBER COUNTY — Wentz' Skinner 1, cnw ne 29-31s-14w, dr 4545 ft, to run csg. Southern Drlg. Co. et al's Davis 1, sw se ne 13-34s-15w, est. 1,500,000 ft gas, comp.

BARTON COUNTY—Price et al's Ehrlich 1, nw nw se 10-16s-13w, sd 3140 ft. Suppes & Witts' Hayes 1, nw nw nw 7-16s-15w, dr 3150 ft. Torry & Feaster et al's Feist 1, ne ne se 29-18s-11w, sd 2215 ft. Palmer Oil Co.'s Morris 1, se nw ne 6-19s-15w, dr 3004 ft. Lario et al's Peter 1, nw nw nw 24-20s-11w, dr 1995 ft. Byers et al's Ewing 1, cw½ s½ sw 35-19s-15w, rig. Continental's Klug 1, cn½ n½ ne 18-17s-12w, sd 859 ft. Torry & Feaster et al's Kimpler 1, se ne ne 31-18s-11w, dr 1700 ft. Witt et al's Murry 1, nw nw sw 14-17s-14w, rig.

BUTLER COUNTY—Western Kansas P. & R. Co.'s King & Marshall 1, nw nw sw 11-28s-6e, sd 2827 ft. Mohawk Oil Co.'s Overstreet 1, nw nw nw 19-26s-8e, sd 555 ft.

COWLEY COUNTY—Baden, Johnson, Roth & Farrout's David 1, ne ne sw 35-30s-4e, td 2975 ft, co. Wakefield et al's Auman 1, se se ne 32-33s-3e, dr 2680 ft. Winkler-Koch et al's Harlan 1-B, cnw ne 13-31s-7e, ru.

ELLIS COUNTY—Helmerich & Payne et al's Kuhn 1, nw sw ne 16-13s-20w, sd 3818 ft. Lewis Roark et al's Bemis 1, se se se 16-11s-17w, dr 2292 ft. Reynolds et al's Walter 1, se ne sw 2-12s-18w, mim. Palmer & Storm King's Bowlby 1, ne nw nw 13-11s-16w, dr 490 ft.

ELLSWORTH COUNTY — Lario et al's State 1, sw sw sw 29-15s-8w, sd 2525 ft. Franco Central et al's Frevert 1, sw sw sw 8-17s-10w, dr 3067 ft. Keith et al's Schepmann 1, sw sw nw 22-17s-10w, ru.

GRAHAM COUNTY—Helmerich & Payne's Stites 1, csw sw 8-19s-22w, moving in spudder. Vickers & Phillips Pet. Co.'s Hutton 1, ne ne se 29-8s-22w, ru.

HARPER COUNTY—Kessler & Their et al's Wolfje 1, sw sw ne 17-33s-2w, td 5078 ft, D&A.

HARVEY COUNTY — Hartman & Blair's Redinger 1, nw nw nw 15-24s-3w, dr 3475 ft. Goering Bros.' Barinard 1, ne ne sw 3-23s-2w, running 8-in csg 2997 ft.

LOGAN COUNTY—Alma Pet. Co. & McNeely's Watchorn 1, csw ne 13-15s-33w, rur.

McPHERSON COUNTY — Carey et al's Husband 1, se se nw 6-19s-13w, dr 2660 ft.

Hollow, Toews, & Hinkle's Aschman 1, nw nw se 8-21s-4w, td 3335 ft, lowering 8-in csg to shut off cave. Wentz' Holdeman 1, nw nw se 16-18s-1w, ru.

PRATT COUNTY—Skelly et al's Gilchrist 1, ce¼ 7-28s-11w, cellar.

RENO COUNTY — Allison-Fitzwilliams et al's Dukelow 1, ne ne ne 11-22s-8w, dr 3330 ft. Haynes Bros. et al's Mueller 1, se se nw 30-24s-4w, pb to 3400 ft. Stanolind-Amerada's Hilger "A" 1, ne ne sw 21-26s-4w, dr 3652 ft. Shell's Reese 1, cw½ w½ sw 11-26s-9w, coring 3464 ft. McPherson Drlg. et al's Miller 1, ne ne nw 34-24s-5w, rur.

RICE COUNTY—Three Rivers Oil Co.'s Buehler 1, nw nw nw 17-18s-8w, co 3255 ft. Aylward et al's Rickard 1, sw sw nw 22-18s-9w, dr 2660 ft. Douglas & Hutchinson O&G Co.'s Hammell 1, ne ne ne 16-19s-10w, dr 1905 ft. Anderson-Kerr's Wernet 1, nw nw nw 24-20s-9w, dr 2878 ft. Aylward et al's Haas 1, ne nw ne 4-19s-10w, ru. James Davis' Bernstarf 1, sw sw sw 19-19s-10w, br. Hurd's Wright 1, ne ne ne 36-21s-7w, cellar. Continental's Ferguson 1, se nw ne 8-18s-7w, rur.

ROOKS COUNTY—El Dorado Ref. Co. et al's Marshall 1, cse se 8-7s-17w, dr 700 ft. Smith-Ash's Nelson 1, nw nw ne 27-10s-16w, sd 3695 ft. Tree Oil Co. & Findeiss' Johnson 1, sw sw se 26-10s-19w, dr 3309 ft. Lario et al's Fisher 1, ne ne ne 22-10s-18w, dr 1290 ft. Gillespie & Son's Low 1, ne ne nw 12-6s-18w, dr 750 ft. Murfin et al's Wasthusin 1, ne ne se 19-9s-16w, dr 1175 ft.

RUSH COUNTY—Twin Drlg. Co. et al's Appl 1, sw sw ne 29-17s-17w, dr 3295 ft. Ramsey Pet. Co. et al's Darkes 1, sw sw nw 5-17s-20w, dr by csg at 3600 ft. Gypsy Oil Co.'s Kraisinger 1, se ne se 23-18s-17w, dr 2919 ft.

RUSSELL COUNTY—Pryor & Lockhart's Spicer 1, ne ne se 21-11s-15w, dr 3330 ft. Roth & Farrout's Shaffer 1, nw nw ne 31-13s-12w, ur 8-in csg 2500 ft. Stearns & Streeter's Drelling 1, sw sw sw 8-13s-15w, dr 2794 ft. Hartman & Blair's Mills 1, se se sw 27-13s-15w, dr 2930 ft. J. Brouk & R. D. Bailey's Kluesner 1, nw nw se 34-15s-12w, dr 3225 ft. Coraleana's Flegler 1, se se se 11-15s-14w, ur 8-in csg 3072 f. Nassau Oil Corp.'s Karst 1, nw sw ne 27-15s-14w, ur 8-in csg 2565 ft. Coraleana's Berrick 1, ne nw ne 6-15s-13w, ru. Hartman & Blair et al's Claussen 1, se ne sw 34-12s-14w, dr 925 ft. Murfin et al's Gorham Estate 1, ne ne se 29-14s-15w, mim.

SEDGWICK COUNTY — Dickey et al's Chase 1, se se se 11-27s-2e, ur 8-in csg 2851 ft. Derby et al's Bartholomew 1, sw sw nw 8-27s-4w, dr 4035 ft. Allison & Fitzwilliams et al's Struthers 1, ne sw sw 34-28s-2w, dr 3910 ft.

STAFFORD COUNTY—Rose Spring Drlg. Co. et al's Toland 1, nw nw sw 2-25s-14w, dr 2434 ft. Atlantic & Phillips Pet. Co.'s Cornwell 1, cne sw 4-25s-13w, dr 3080 ft. Sedgwick Oil Co.'s Elmwood 1, se sw sw 33-21s-11w, dr 1790 ft.

SUMNER COUNTY—Allison & Fitzwilliams et al's Hitchcock 1-B, se se nw 16-30s-1w, fsg 3812 ft. Winkler & Koch et al's Belsley 1, sw sw nw 2-32s-2w, sd 2900 ft. Wilson et al's Clark 1, csl nw 15-35s-1w, sd 1706 ft.

TREGO COUNTY—Hansa & Lauck's Lang 1, se se nw 1-14s-21w, fsg 3645 ft. Vickers Pet. Co. et al's Secor 1, nw nw nw 25-15s-24w, td 3650 ft.

WOODSON COUNTY—Saco Oil Co.'s Hassenpflug 1-A, sw nw ne 34-25s-14e, dr 930 ft. Sheedy's Snattinger 1, ce½ ne ne 3-26s-14e, dr 900 ft.

NORTH LOUISIANA

BOSSIER PARISH—Ark. La. Gas Co.'s R. O. Roy 3, 18-17n-11w, dr 2900 ft. Bossier O&G Co.'s Sherrell 3, se se 13-19n-12w, fsh ds 2025 ft. W. E. Neill et al's Curtis Plantation 1, se se 19-17n-12w, sd for ds 235 ft. Producers O&G Co.'s E. C. Edwards 1, se sw 27-18n-11w, sd 565 ft. A. H. Richardson's Nattin 1, ne sw 15-22n-14w, spd and sd. L. R. Skidmore's Davis 1, se se 12-18n-13w, dr 2545 ft. Virgil Liken's Palmer 1, sw ne 1-21n-11w, spd set 12½-in csg 160 ft.

CADDO PARISH (Rodessa)—Ark. La. Gas Co.'s Rodessa O&L Co. 3, se ne 22-23n-16w, ru; J. S. Teamer 1, sw se sw 13-23n-16w, dr 5420 ft. Eastern Prod. Co.'s & D. C. Richardson's Caddo School Board 1, sw cor block 35 (Rodessa townsite, 2-ac), 23-23-16, spd 10-in csg 400 ft, dr 2810 ft. Haynes Prod. Co.'s W. B. Lawton 1, sw c 14-23-16, arrg to test 6052 ft. H. Otwell 1, se se 15-23n-16w, dr 5870 ft. Will Hall, Tr., Dr. J. C. Willis, Jr. 1, lot 5, block 7, Rodessa townsite 23-23n-16w, dk. R. W. Norton's Caddo Levee Bd. 1, se ne 21-23n-16w, dr 4550 ft. O'Brien Bros. & Rex Drlg. Co.'s Rodessa O&L Co. 1, 14-23n-16w, dr 5247 ft. Pelican O. & Gasoline Co.'s Sexton 1, ne se 14-23n-16w, dr 5920 ft. United Gas Pub. Serv. Co.'s Thomas Unit 1, ne nw nw 23-23n-16w, dr 5425 ft. Wm. Bremer Unit 1, sw nw sw 22-23n-16w, 85⅝ in csg 4995 ft. G. Gibson Est. 1, se sw se 15-23n-16, dr 4825 ft. Rodessa O&L Co. 1, se ne 15-23-16, dr 4825 ft. Rodessa O&L Co. 1, se ne 15-23-16, dr 5080 ft. Rodessa O&L Co. 2, ne ne sec 22-23-16, spd, dr 742 ft.

CADDO PARISH—Ed Bailey's Hartzo 1, ne nw 28-22n-16w, sd 1230 ft. F. H. Hyde et al's Thigpen-Herold 1, nw nw se 5-15-15, dr 1250 ft. A. D. King, Tr.'s, Roach 1, 4-14-16, sd 2712 ft chalk. Ty-Stan, Inc., Jolly 1, sw sw 22-22-15, dr 1780 ft.

CALDWELL PARISH—Caldwell Drlg. Co., Luna Gore 1, ne sw 30-18n-3e, dr 1305 ft.

CALDWELL PARISH—Critchett & Wood's Kyle 1, 18-11n-3e, dr 1092 ft. G. W. Zeigan et al's La. Cent. Lbr. Co.'s 1, nw sw sw 25-13n-3e, sd 1190 ft.

CATAHOULA PARISH—McIntyre et al's Tensas Delta 1, sw nw se 18-10n-2e, 10-in csg 340 ft, sd. Phillipi, et al's La. Cent. Lbr. Co. 2, nw nw 41-9n-6e, dk.

CLAIBORNE PARISH—E. T. Oakes et al's Patton Est. 1, ne ne 1-20n-5w, elev 357.3 ft, dr 2500 ft.

DE SOTO PARISH—Flesh & Hootkins Farmer 1, se se 14-12n-13w, rur to kill and test so & sg, td 3035 ft. Frailey et al's J. E. Stell 1, 5-12-16w, spd 12-in csg 87 ft. M. L. Stephens et al's Alston 1, ne sw 11-11n-16w, arrg to test at 2000 ft.

GRANT PARISH—Alexander et al's Maxwell 1, 9-9n-1e, sd 520 ft.

LINCOLN PARISH—Lide & Greer's Fowler 1, nw sw se 10-17n-4w, dr 4175 ft.

MADISON PARISH — Southern Land & Expl. Co.'s Deltic Inv. Co. 1, nw nw 1-17n-12e, sd 2048 ft.

MOREHOUSE PARISH—J. H. Gibson et al's Thomas 1, ne ne 16-22n-7e, dr 2910 ft. Zeigan & Bacon's Crossett Lbr. Co. 2, se sw 36-23n-6e, spd and sd.

NATCHITOCHES PARISH — Edwards & Turner's Prudential Life Ins. Co. 1, nw nw 26-10n-6w, dk. Howard & Kittrell's DeBlieux 1, ne nw 83-10n-7w, dr 1280 ft. Missouri Drlg. Co.'s Brown Lbr. Co. 1, 5-10n-10w, sd 1070 ft. Roy Raines et al, Raines 1, sw sw 28-9n-10w, dr 4195 ft.

OUACHITA PARISH — American Liberty Oil Co.'s Golson 1, nw nw 25-17n-1e, dr 4692 ft.

RED RIVER PARISH—Howard & Kittrell's Chaffraix 1, 30-12n-1w, dk.

SABINE PARISH—M. T. Hines, J. B. Hill 1, sw ne 4-6n-11w, sd 3012 ft.

UNION PARISH—Southern Prod. Co.'s W. E. Clark 1, se nw nw 17-23n-1e, sd 2296 ft.

WEBSTER PARISH—Burnett et al's Fulbright 1, ne ne 1-18n-10w, dr 825 ft. Red Hawk Oil Co.'s J. I. Mayfield 1, se nw 9-23-9, dk.

WINN PARISH—P. E. Parson et al's Tremont Lbr. Co. 1, nw sw 10-12n-2w, sd 410 ft.

SOUTH LOUISIANA

AVOYELLES PARISH—Southern Star Pet. Co.'s I. G. Boyette 1, sec 28-3n-5e, abd 4515 ft.

CALCASIEU PARISH — Buhler Oil Co.'s Faist 1, sec 26-8s-10w, sd 3910 ft. Union Sulphur Co.'s Prairie Farm Land 1, s of Lake Charles, sec 1-11s-9w, dr shale 8205 ft. Wheeler Oil Co.'s School Land 1, s of Iowa field, sec 16-9s-7w, estimated 6355 ft.

CAMERON PARISH—Magnolia's Broussard 1, Willow Lake, sec 13-12s-9w, milling 7890 ft.

EAST BATON ROUGE PARISH—Superior's Duplantier Community 1, s of Baton Rouge, sec 65-7s-1w, dr shale 8409 ft.

IBERIA PARISH—Texas Co.'s State Lake Fausse Point, sec 35-11s-8e, setting 7 in csg as protection at 6365 ft.

PLAQUEMINES PARISH—Wrather Co.'s Hero 1, near Oakville, sec 72-14s-24e, dr shale 3370 ft.

ST. BERNARD PARISH — Emerald Pet. Co.'s Shell Beach Properties 1, Bayou Louis, sec 31-13s-15e, sd 1300 ft.

ST. MARTIN PARISH—Texas Co.'s St. Martin Land 1, Henderson, sec 9-8s-7e, dr shale 8897 ft. Texas Co.'s State Lake Mengoulots 1, n of Bayou Chene, sec 10-9s-9e, woc 81 ft.

TERREBONNE PARISH—Dulac Oil Co.'s Harry Bourg 1, se of Lake Boudeax, sec 10-20s-17e, dr shale 2710 ft.

VERMILION PARISH — Del-Shell's Delcambre 1, sec 63-12s-5e, dr sand 1710 ft.

NEW MEXICO

EDDY COUNTY—Geo. F. Getty Oil Co."s Andrew Dooley 7, swc nw 24-20s-29e, elev 3309 ft, dr gray sand 6220 ft.

LEA COUNTY—Amerada's H. F. Andrews 1, c nw nw 12-20s-36e, Monument area, elev 3576 ft, top anhydrite 933 ft, salt section 1195-2298 ft, tested 30 bbls natural at 3829 ft, used 2000 gals acid, then flowed 508 bbls 22 hrs and 6,000,000 ft gas, dd to 3901 ft, flows 30 bbls per hr, sd to use 500 gals acid; State 2-F, c nw sw 36-19s-36e, Monument area, elev 3600 ft, top anhydrite 1010 ft base salt 2310 ft, dr 3610 ft; State 1-G, c sw sw 18-19s-37e, Monument area, top anhydrite 1263 ft, dr 3475 ft. Barnsdall Oil Co.'s Alaska Cooper 1, c ne ne 12-20s-36e, Monument area, mim. Culbertson & Irwin's Eva Brown 1, c ne ne 23-21s-32e, elev 3821 ft, top anhydrite 1415 ft, top salt 1580 ft, dr 3210 ft; Sue Richardson 1, c sw se 10-21s-32e, elev 3808 ft, top anhydrite 1405 ft, top salt 1568 ft, dr 2470 ft. Gypsy Oil Co.'s Baxter V. Culp 1, c ne nw 19-19s-37e, Monument area, elev 3687 ft, dr lime 2805 ft; Steve B. Taylor 1, c se ne 24-18s-38e, 2¾ mi ne Hobbs field, rig. R. H. Henderson et al's P. J. Langley 1, c se se 8-25s-37e, elev 3162 ft, top anhydrite 1105 ft, top salt 1205 ft, tested sw in lime 3482-85 ft, pb to 3470 ft, shot 35 qts nitro at 3400-50 ft, flowed 65 bbls oil. Jeffers Oil Co.'s

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C. Britt-Conoco 1, c se nw 7-20s-37e, Monument area, elev 3554 ft, top anhydrite 970 ft, salt 1115-2270 ft, dr lime 2625 ft; C. M. Carlson 1, c nw se 27-25s-37e, elev 3025 ft, salt 1065-2475 ft, show gas 2890 ft, dr 3235 ft. Harry Leonard et al's C. W. Justis 1, swc nw nw 20-25s-37e, elev 3067 ft, mudded off gas, dr 3145 ft. Jim ne outpost for Eunice field. elec 3563 ft, top an-Murray et al's W. J. Wallace 1, sec 3-21s-36e, hydrite 1255 ft, sg 2716-61 ft, dr 3250 ft. Ohio Oil Co.'s State-Maxwell 1, c ne nw 16-22s-36e, s Eunice area, elev 3573 ft, td 3857 ft, no prod before treated with 2000 gals acid, then swabbed 4 bbls per hr, retreated with 4000 gals and 5000 gals acid, tested 20 bbls per hr and sd for tankage. Phillips Pet. Co.'s B. V. Culp 1, c nw nw 19-19s-37e, Monument area, elev 3713 ft, dr 2060 ft. Phillips & Pure's C. D. Woolworth 1, lse 3, c sw sw 6-25s-37e, North Jal area, elev 3187 ft, top brown lime 2700 ft, sg 3146-55 ft, testing 3407 ft; C. D. Woolworth 1, lse 2, c ne nw 33-24s-37e, 3½ mi e Cooper field, sp. Shell's State 1-B, c sw nw 36-19s-36e, Monument area, elev 3603 ft, dr 2340 ft. Sun Oil Co.'s W. B. Maveety-Weir 2, c sw se 35-19s-36e, Monument area, elev 3602 ft, top anhydrite 1003 ft, salt series 1150-2298 ft, dr 3840 ft; W. B. Maveety-Weir 3, c se ne 35-19s-36e, mim; H. S. Record 1, c nw nw 22-22s-36e, s Eunice area, elev 3539 ft, top anhydrite 1490 ft, salt series 1592-3015 ft, dr 3460 ft. TP Coal & Oil Co.'s State 1, lse 2, c se sw 9-22s-36e, s Eunice area, elev 3567 ft, top anhydrite 1408 ft, salt section 1499-2960 ft, td 3835 ft, flowed by heads with 4,000,000 ft gas, treated with 3000 gals acid, tested 25,000,000 ft gas with spray oil via 3-in tubing. Tide Water Oil Co.'s State 1, sec se ne 14-18s-37e, nw Hobbs, elev 3689 ft, dr 1500 ft.

CHAVES COUNTY — John Tannehill's Campbell 1, ne se 1-11s-25e, dr 910 ft. Worman Oil Trust's Hoar 1, nw se 9-14s-15e, sd at 1400 ft.

SANDOVAL COUNTY—Continental's L-Bar Cattle Co. 1, se 2-13-4w, dr 3250 ft.

SAN MIGUEL COUNTY—Cabra Springs O&G Co.'s West Pina Mesa 2, sw sw sw 31-12n-22e, dr 4361 ft; Pina Mesa 1, sw ne ne 22-12n-22e, dr 1496 ft.

TORRENCE COUNTY—48 Petroleum Co.'s Greenfield 1, nw sw 17-9n-8e, dr 850 ft.

UNION COUNTY — Sierra Grand Corp.'s Rogers 1, cne se 4-29n-29e, dr 2951 ft.

OKLAHOMA

ALFALFA COUNTY—Tex-O-Kan's Acre 1, csw ne 14-24n-11w, td 6296 ft, fsg for dr pipe.

ATOKA COUNTY — Pierce et al's Aetna Life 1, nw sw ne 10-1n-13e, sd 1305 ft. Vierson et al's Williams 1, ne sw nw 34-2s-10e, td 2236 ft. Mid-Continent et al's Fulton 1, sw sw sw 19-1s-12e, sd 3000 ft. L. O. Garner et al's Garner 1, ne nw ne 27-1n-15e, dr 305 ft. Malarnee et al's D. O. K. Land 1, cse se 35-2s-13e, co 800 ft off bottom.

BECKHAM COUNTY—Star Oil Co.'s Blair 1, cnw se 32-9n-26w, rig and tools on lcn.

BRYAN COUNTY—Trio Oil Co.'s Gilbert 1, sw ne 25-6s-7e, td 905 ft. Welch's Collins 1, sw sw nw 10-8s-8e, sd 825 ft.

CADDO COUNTY—Denver P&R Co.'s Sah-Cam 1, cse se 33-10n-10w, dr by tools. Lee et al's Stacy Ferrell 1, sw ne ne 3-6n-13w, sd 2506 ft. Turner et al's Sapin 1, ne ne sw 1-5n-11w, td 3112 ft, woc.

CARTER COUNTY—Waco Turner's Munson 1, ne nw ne 35-5s-2w, sd 4768 ft. Carter's Humble-Williams 1, sw ne sw 27-2s-3w, dr 7226 ft.

CHOCTAW COUNTY—Rhodes et al's Possumik Savings Bank 1, se se se 1-5s-17e, fsg 605 ft.

CLEVELAND COUNTY — Hall-Briscoe, Inc.'s Fant 1, sw sw ne 27-10n-2w, dr 6700 ft. Arab Pet. Co.'s Kennedy 1, se se nw 16-7n-1e, td 6048 ft. Sinclair Prairie et al's Lizzie Hasmann 1, sw se sw 21-10n-2w, dr 5845 ft.

COAL COUNTY—Carter et al's Thompson 1, csl ne nw 34-2n-9e, dr 5147 ft.

COMANCHE COUNTY — Oscar Jones' Scheets 1, ne ne sw 26-3n-10w, ru and sd.

GARFIELD COUNTY—Sunray Oil Co.'s Shanks 1, sw sw ne 10-20n-4w, br.

GARVIN COUNTY—Orbit Oil Corp.'s Federal Land Bank 1, sw sw sw 10-4n-3e, lcn.

GRANT COUNTY—Stanolind's Crouse 1, cne sw 29-25n-8w, td 6502 ft, dd (formerly Helmerich & Payne). Shell's Foster 1, nw nw se 30-27n-8w, dr 3295 ft. Wentz et al's Wirtz 1, se se nw 22-28n-4w, dr 4164 ft. Yingling et al's Allen 1, sw sw ne 36-26n-4w, rog. Westgate Oil Co.'s Clark 1, nw ne nw 17-29n-4w, td 4775 ft, swab 3½ bbls oil 1 hr, to dd.

HARMON COUNTY—King & Hutcherson's Hollis 1, nw nw sw 20-3n-25w, woc 60 ft.

HUGHES COUNTY—Texas Co.'s Keaton 1, nw nw sw 4-8n-10e, shot 15 qts 3985 to 4038 ft. Earl Sadler's Scott 1, nw nw nw 23-7n-9e, pulling 10-in csg 846 ft. Caprock Oil Co.'s Parks 1, sw sw se 34-7n-8e, dr 200 ft. Sivils et al's Montgomery 1, nw sw nw 7-9n-9e, lcn.

JACKSON COUNTY—Gypsy's Boucher 1, nw sw sw 32-1n-19w, fsg 2340 ft. Dengail Oil Co. et al's Robinson 1, se se ne 32-1s-22w, dr 4490 ft. Associated Oil Co.'s Harrell 1-A, ne ne se 13-1s-21w, dr 980 ft. Marshall & Burnham's Hess 1, ne sw ne 27-1s-20w, dr 1429 ft.

JEFFERSON COUNTY—Howell's Curry 1, se se sw 36-4s-9w, dr 2194 ft.

JOHNSTON COUNTY — Equitable O&G Co.'s Bellesey 1, ne ne sw 12-2s-4e, lcn. Godfrey & Neff's Ned 1, se nw nw 29-4s-6e, lcn.

KAY COUNTY—Robinson Drlg. Co. et al's Hermes 1, sw sw nw 6-26n-4e, dr 2400 ft. Lindsay's Waggoner 1, nw nw ne 3-27n-1e, dr 4052 ft. Lewis Prod. Co.'s Hollenback 1, se ne se 18-27n-2e, sd 800 ft.

KIOWA COUNTY—Connelly's McCord 1, nw se ne 15-1n-17w, dr 410 ft. Rajah et al's Stone 1, cse ne 34-1n-17w, sd 1476 ft.

Le FLORE COUNTY—McGraw et al's Tidwell 1, cnw se 17-3n-22e, sd 200 ft.

LINCOLN COUNTY—Texas Co.'s Niccum 1, se sw nw 28-14n-5e, shot 20 qts 3745-3770 ft, pb 3575 ft, to shoot. Amerada & Stanolind's Connelly 1, se ne se 23-14n-2e, sd 5174 ft.

LOGAN COUNTY—Anderson-Kerr et al's Goodiun 1, ne ne ne 15-15n-3w, dr 5125 ft. Anderson-Prichard & Buttram's Cavalt 1, nw sw se 22-16n-3w, dr 4467 ft. Stanolind-Amerada & Eason's Gragg 1, sw sw ne 20-18n-4w, td 5870 ft. Texas Co.'s Wood 1, sw sw ne 34-15n-4w, sd 6166 ft.

LOVE COUNTY—Sinclair Prairie's Stockton 1, se se sw 26-6s-2w, dr 3875 ft.

MAJOR COUNTY—I. T. I. O. & Continental's Fairview 1, csw se 32-22n-14w, td 7451 ft, D&A.

MARSHALL COUNTY—Smith's Chestnut 1, ne ne ne 23-8s-5e, td 275 ft, moving out mach. Schermerhorn Oil Co.'s Rich 1, sw se se 35-4s-4e, td 1053 ft, D&A.

MURRAY COUNTY—Equitable O&G Co.'s Ferguson 1, ne ne sw 36-1s-3e, dr 2790 ft.

NOBLE COUNTY—Atlantic et al's Strom 1, ne ne se 8-20n-1w, dr 5200 ft.

OKFUSKEE COUNTY—Sunray's Culla 1, ne sw ne 13-12n-8e, dr 2350 ft. Sherry et al's Washington 1, sw sw ne 21-13n-7e, lcn.

OKLAHOMA COUNTY—Gypsy & I. T. I. O. Co.'s Salisbury 1, nw ne ne 13-14n-4w, td 6730 ft, D&A. Sinclair Prairie's Corbett 1, ne nw ne 17-13n-3w, 135 bbls sw 1 hr with trace oil.

OSAGE COUNTY—J. A. Freeburg et al's 1, ne ne se 1-25n-6e, sd 1433 ft.

PAWNEE COUNTY — Stanolind et al's Shunatana 1, ne sw se 32-22n-3e, td 4330 ft.

PONTOTOC COUNTY—Continental's McCarthy 1, csw nw 12-1n-7e, dr 3404 ft. McBride's Copeland 1, se se nw 31-4n-5e, ur 12-in csg 589 ft.

POTTAWATOMIE COUNTY — Ross Oil Co. et al's Sparkman 1, se se ne 33-8n-4e, lcn.

PUSHMATAHA COUNTY—C. W. Whitehead's Messer 1, se sw sw 35-3s-18e, sd 3380 ft.

SEMINOLE COUNTY—Van Deventer et al's Bender 1-A, ne ne sw 3-8n-8e, co 3185 ft.

Verser-Clay et al's Thomas 1, ne se nw 1-6n-6e, sd 3030 ft. Scott & Smith's Abb 1, se nw se 4-6n-6e, td 2325 ft, pulled 7-in csg, rur to dd.

STEPHENS COUNTY—Prince Brothers' Williams 1-A, sw sw se 19-2n-8w, ru and sd. George Pace et al's Damron 1-A, se se sw 25-2s-6w, td 1910 ft, abd. Franklin & Duncan's Woolsey 1, nw nw se 10-3s-6w, dr 680 ft.

TEXAS COUNTY—Cabot Carbon's Jackson 1, cnw ¼ 7-3n-15ECM, est 50,000,000 ft gas.

WASHITA COUNTY—McWhirter et al's Fee 1, nw sw sw 34-8n-19w, sd 1015 ft.

EAST TEXAS

ANDERSON COUNTY—Gulf's M. A. Davey-Royall 3 (162-ac), John Squyres sur, Camp Hill area, dr 3200 ft; E. T. McCain 1 (80-ac), P. Martin sur, Camp Hill area, lost returns, 2428 ft. Tide Water and Texas Seaboard's N. E. Wills 21-A, Cayuga field. Trinity test, elev 308 ft, cem 7-in cas 8750 ft, tested hot salt w at 8867 ft, dr 8890 ft; Shaw & Cern 2 (1216-ac), Daniel Parker sur, Long Lake area, dk; H. B. Keeling 1 (80.65-ac), Simon Sanchez sur No. 10, Long Lake area, elev 304 ft, top broken Pecan chalk 3582 ft, base soft chalk 3789 ft, dr 4470 ft.

BOWIE COUNTY—Tex-Ark Oil Co.'s J. B. Hamilton 1 (40-ac), Jessie Milam sur, elev 272 ft, sd 1121 ft. Woodley & Bentley's J. D. Lumpkin 1 (245-ac), John McDermott sur, 1¼ mi sw of Dalby Springs, sp and sd.

CAMP COUNTY—E. J. Moran, G. E. & Ray Hubbard's W. M. Mitchell 1 (100-ac), L. Rose sur, 1½ mi n of Newsome, lcn.

CASS COUNTY — American Liberty Oil Co.'s J. B. Rogers 1, C. M. Robinson sur, Rodessa area, lcn. Stanley A. Thompson et al's G. H. Allen 1 (150-ac), Wm. King sur, 3 mi s Hughes Springs, lcn.

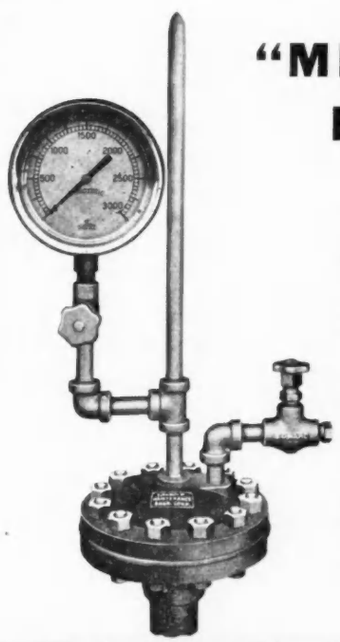
ELLIS COUNTY—Beasley O&G Co.'s Mrs. Erie Roller 1 (200-ac), Ruidoso Irrigation Co. sur, 1 mi s of Crisp, lcn.

FREESTONE COUNTY—F. E. Frederick et al's J. P. Fulton 1 (403-ac), J. P. Fullerton sur, 3 mi e of Donie, lcn. Stewart & Watson's S. A. Burleson-R. S. Red 1 (80-ac), J. Y. Aguilera sur, Red Lake area, rig.

HUNT COUNTY — J. F. Morrissey Co., Inc.'s, P. B. Fry 1-A (146-ac), Calloway Davis sur, 7 mi se Ladonia, elev 561 ft, top Paluxy 3605 ft, top Red Beds 3806 ft, fsh dp 4420 ft. Long and Wolfe's A. L. Chapman 1 (444½-ac), Enas Murphy sur, 6 mi w Greenville, elev 595 ft, top Gober chalk 740 ft, top Woodbine series 2036 ft, top Red Beds 2154 ft, top Georgetown lime 2630 ft, dry and abd 2649 ft.

KAUFMAN COUNTY — Murray & Emerson's G. W. Martin 1 (100-ac), W. F. C. Butler sur, elev 429 ft, sd 1784 ft.

LAMAR COUNTY—North Texas Synd. (E. T. Bradley, Tr.'s) Alice Wright 1 (163.3-ac), Alfred Moore sur, 2 mi ne Caviness, dk. Texas Gulf Pet. Co.'s A. L. Darnell 1 (40-ac), H. L. Williams sur, 4 mi ne Paris, dr 1605 ft.



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LEON COUNTY—Tide Water & Texas Seaboard's A. W. Johnson 1 (425.81-ac), Simon Sanchez sur, No. 7,Lon g Lake area, rig.

LIMESTONE COUNTY—Dan H. Daugherty et al's Sallie Welch 1 (94-ac), Pedro Varella sur, Austin chalk 2350-2650 ft, top Woodbine, 2890 ft, td 3121 ft, used 1000 gals acid, trace gas with sw on bailing test.

MORRIS COUNTY—J. N. Buchanan et al's P. M. Staggers 1, J. D. Nelson sur, elev 363 ft, set tubing, td 4327 ft. C. M. "Dad" Joiner et al's fee 1, Wm. Coffey sur, lcn. Steve J. Rotondi et al's W. & C. Smith 1 (50-ac), M. C. Vela sur, 2½ mi sw Naples, sd 1761 ft. B. L. Watson et al's E. Hall 1 (177-ac), Levi Jordan sur, 5 mi ne Daingerfield, top sand 4175 ft, sd 4205 ft.

NAVARRO COUNTY—L. N. McCulloch et al's Berry Bros. 1 (35-ac), W. W. Moss sur, Austin chalk 751-1060 ft, sd 1490 ft. Wiggins-Albritton & Wiggins' D. A. Donoho 1 (63½-ac), Highnote & Caudle sur, 2 mi sw Corsicana, elev 467 ft, sd for cas 1439 ft.

RAINS COUNTY—W. A. Allen, Geo. W. McClung & Harry B. Baker's Ida Bullard 1 (75-ac), Nancy Brantley sur, 2 mi sw Emory, dk; S. P. Cain 1 (98½-ac), J. Harges sur, A-109, 1 mi nw Emory, lcn; Mrs. Olma Giles 1 (77-ac), Thos. Cunningham sur, 6½ mi sw Emory, dk.

RED RIVER COUNTY—W. G. Clark and R. H. Chew's J. F. Brooks 1 (321-ac), Ben Gooch sur, ½ mi s Bagswell, lcn. Garson & Seigel's W. T. Morris 1 (351-ac), Joseph Guest sur, 1 mi s Detroit, dk.

RUSK COUNTY—J. W. Shipman et al's Citizens Nat'l Bank 1 (125-ac), J. J. Y'Barbo sur, 4 mi ne Henderson, elev 432 ft, sd 2500 ft.

CASS COUNTY — American Liberty Oil Co.'s J. B. Hodges 1, S. M. Robinson sur, lcn.

HARRISON COUNTY — Adams & Bird's Washburn Lbr. Co.'s 1, F. Jordan sur, dk. Itex Oil Co.'s T. J. Taylor 1, S. H. Payne sur, set 7-in csg 5819 ft, td 5853 ft. Roy C. Swails, et al's Bonnie Pitts 1, G. W. Martin sur, recementing 8-in csg 1745 ft, td 1900 ft.

PANOLA COUNTY—J. L. Cadrin's Robt. Johnson 1, J. Johnson sur, ru. Flinchbaugh & McAneny's G. H. McCormick 1, Jas. P. McAdams sur, sd 2510 ft. G. F. Hudson's J. F. Nail 1, C. McCrary sur, sd 2387 ft. George LeGrande's P. J. Laidleigh 1, A. Thompson sur, sd 885 ft; Wallace 1, A. M. McLaughlin sur, rog.

SHELBY COUNTY—I. M. Bradley's Ashberry 2, J. M. Mitchell sur, sd 3590 ft. J. W. Reynolds et al's Polley Est. 1, E. F. Christenberry sur, dk.

SOUTH TEXAS

ATASCOSA COUNTY—R. McIntyre's H. A. Billinck 1, J. B. Woodleff sur No. 246, 7½ mi e Coughran, lcn. Don Megehan's Donna Farms 2, Barbara Sanchez sur, 7 mi se Christine, dr 3925 ft.

BANDERA COUNTY — Palm Winn Oil Co.'s R. B. Watson 1, A. Curver sur, No. 71, 2 mi n Medina City, dr 2050 ft. Plateau Oil Co.'s R. G. Garrison 1, sec 506, GC&SF sur, 8 mi sw Medina City, dr 4040 ft.

BASTROP COUNTY — Batts & Jarmon's Mrs. Mary Harris 1, J. Maximillian sur, N. Dale area, fsh 2300 ft. Joe Mills' American Nat'l Bank 1, R. Gage sur, N. Cedar Creek area, coring 1810 ft, top serpentine 1705 ft. F. Wilson's M. C. Callahan 1, A. Mayes sur, dr 825 ft.

BEE COUNTY — G. M. Church's J. C. Woods 1, J. Ryan sur, 3½ mi s Beeville, tried to blow-out 5810-14 ft, set 5 in liner on bottom. Otis Dyer's Imogene Hall 1, 2414 ft sel, 330 ft swl of 193-ac tr, T. J. Butler sur, n Dirks field, ru. Rube Heflin's Brashear 1, 150 ft nl and wl 50-ac tr, Henry Coley sur, 1 mi ne Mineral, dk. Francis P. Hynes et al's Theo. M. Plummer 1-A, Theo. M. Plummer sub, sec 33, Chessman sur, 4 mi sw Caeser field, elev 356 ft, d.f., Pettus sand 2975-88 ft, comp. large gasser, R.P. 1250 lbs. Littlejohn et al's Borroum 1, Wm. Gill sur, ½ mi nw Rutledge pool, dr 2450 ft. D. V. Smith's B. B. Atkins 1, M. Woods sur, lcn. Worth Oil Co.'s Rutledge 3 (1-B), A. Hadley sur, Patent 34, 1/3 mi sw Rutledge pool, sp and sd. R. J. Worthington et al's S. B. Chestnut 1, B. Q. Hadley sur, 2000 ft se Worth producer, setting sur csg with water well rig.

BEXAR COUNTY — American Gas Co.'s Oliver 5, M. F. Rodriques sur, Gas Ridge, sd 2902 ft, making deal to dd. James B. Cunningham et al's D. F. Ridder 1, Baerrera sur, abs 50, 2 mi e McDonna, dr 600 ft. Fay T. Chew et al's Jones 5, sec 9, Jacinto Pena sur, 1½ mi e Adkins, td 660 ft, sand 652-60 ft, set 6⅝ csg 642 ft completing. Dorine Oil Co.'s S. Tudyk 2, blk 4, F. Cardenas sur, 18 mi e San Antonio, td 759 ft, set csg 575 ft, testing. Joe Dupree's R. S. Coffey 1, 910 ft el, 965 ft sl of 420-ac tr, F. Rodriguez sur, 7 mi s of San Antonio, td 177 ft, pull 12½ 75 ft and clear hole to set csg deeper. C. J. LeCompte's A. Herbst 1, M. Leal sur, 4 mi s San Antonio, sd 377 ft sw sand to set csg. McPhee & Briggs' Florence Lamb 1, M. de Luna sur No. 4, 22 mi s San Antonio, td 2336 ft, 6⅝ in csg 2330 ft, swabbing. Mid-Tex Prod. Co.'s Walker 1, S. W. Dobie sur No. 79, 10 mi n San Antonio, set 8¼ in csg 1880 ft. Carrol C. Raborn's Claud McCauley 1, Wm. Harris sur No. 52, 4 mi s San Antonio, sd 965 ft. F. M. Shaver's A. W. Bitter 1, sp and sd.

BLANCO COUNTY—R. T. Rowe & W. E. Nixon's Polk Morresey 1, T. H. Webb sur No. 11, 2½ mi e Blanco City, sd 356 ft.

BROOKS COUNTY—United Prod. Co.'s K. J. Hocker 1, Palo Blanco de Maguelles gr, Palo Blanco area, cored sand 4242-51 ft, lost tool 4237 ft, now fsh.

CALDWELL COUNTY—Ballard & Whitting's A. G. Bridges 1, S. Seal sur, dr 2010 ft. R. S. Bolling & C. L. Witherspoon's C. F. Robertson 1, John A. Neill sur, td 2230 ft, top chalk 1922 ft, csg 1945 ft, completing. J. J. Elam et al's Tom Brown 1, Cyrus Souvereign sur, 5 mi e Luling, dk. R. Y. Walker's Walker Bros. 2, S. Seal sur, sd 285 ft.

CALHOUN COUNTY — Continental Oil Co.'s Am. Nat'l Realty Co. (Moody) 2, sec 6, blk C. P. Garcia sur, 9 mi se Seadrift, 6 in ds stuck 7384 ft, circulating with oil to loosen. Crown Central Pet. Corp.'s Wilson 1, A. Esparza sur, Port Lavaca area, set 1300 ft sur csg, wocs. Halliburton Oil Prod. Co.'s D. Burton 4, M. Sanchez sur, Port Lavaca area, set 1327 ft sur csg, wocs. Mart Oil Co.'s Brundett, sec 8, Wm. Little sur, Matagorda Island, sd 192 ft. Steinberger Pet. Corp.'s A. Hartman 1, A. Sanches sur, Port Lavaca, ru. Texas Company's A. Shofner 2, A. Sanches sur, Port Lavaca, lcn.

CAMERON COUNTY — J. F. Anderson's Turfitt 1, 300 nl and sl blk 397, San Benito sub, Espiritu Santo gr, 3 mi ne Rio Hondo, dr 1500 ft, clay and sand. W. T. Daniels & King-Woods Oil Co.'s Port Isabel Co. 1, Shares 29, 30 and 31, 6 mi n Bayview, sp.

DE WITT COUNTY—R. Bourke's Stein-

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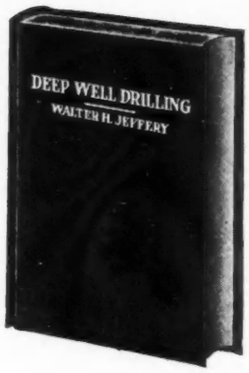

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man 1, Uriah Blue sur, 6 mi s Yoakum, dr 890 ft.

DIMMIT COUNTY — Diamond Half Oil Co.'s A. Hardley Est. 1, R. G. Morgandale sur No. 6, ab 1322, 5½ mi nw Carrizo Springs, 1, ru. Joe Lundin et al's Nueces Lands Irrigation Co. 1, lot 16, blk 7, Bermuda Lands sub, 12 mi ne Carrizo Springs, lcn, leases extended.

DUVAL COUNTY—Allen & Morris' J. T. Dinn 1, sec 665, near Kohler field, sand 2519-40 ft, making dst. Continental Oil Co.'s Clara D. Sevier 6-A, sec 447, Driscoll field, lcn. J. H. Chandler's Rita De Pena 1, sh 4, Mesquite gr., coring 2820 ft. P. K. Kelly's Tinney Est. 1, sec 8, Piedras Pintas area, td 378 ft, to dd. Chas. Kleiner et al's D. Ruiz 1, sec 125, nw Harvey & Henderson well, sp. Magnolia Pet. Co.'s Duval County Ranch Company 1, sec 100, nw Gov't Wells field, td 2135 ft, blew out 2133-35 ft, ran wild short while, killed, pb 1972 ft, 7 in csg set 1962 ft, sand 1965-68 ft, test little oil, dr ahead to 2135 ft again and set 5 in csg, dr out plugs; Mrs. E. Herbst 3, sur 70, Lomo Novio, td 3516 ft, pb 2760 ft, completing. Marzo Oil Co.'s Hagist 1, blk 8, sec 269, 1 mi ne Eagle Hill, elev 460 ft. Gov't Wells sand 2116-21 ft, set csg, wocs. Plymouth Oil Co.'s Cuellar 1, sec 123, G&M Railway sur, 1 mi Harvey & Henderson well, td 2880 ft, sp and set sur csg. Rogers O&G Co.'s Sophie Hoffman 1, sec 118, Hoffman area, td 2880 ft, sand 2870-80 ft, swabbed sw, pb; to perforate csg 2755-70 ft. Santa Clara Oil Co.'s Clara Driscoll Sevier 1, sec 7, ab 605, La Gloria Ranch, 12 mi nw San Diego, dr 2760 ft; R. C. Corbit 1, 330 ft nl and wl sec 92, ne portion county, lcn. Stanolind O&G Co.'s Ira G. Yates 1, sec 416, Labbe district, td 2465 ft, sand 2449-64 ft, flowed 72 bbls fluid 12 hrs, completing, CP 450 lbs, TP 250 lbs. Sun Oil Co. Warden & Drought 1, sec 151, 6 mi nw Gov't Wells, dr 1706 ft, shale.

EDWARDS COUNTY — Paul Tees' B. J. Stewart 1, se¼ sec 2, GC&SF sur, lcn for 6000 ft test.

FRIO COUNTY—W. D. Bacon et al's J. E. Burns 1, T. H. Clifton sur, sw Bigfoot, lcn. Midland Oil Co.'s Sanders 1, C. Costello sur No. 1416, nw Pearsall, lcn.

GOLIAD COUNTY — Keystone Royalties Co.'s C. B. Wood 1, John Shearn sur, 3 mi e Berclair, sd 5961 ft, gassing.

GONZALES COUNTY—Forrester Oil Co.'s H. B Steen 1, N. M. Bane sur, s part of county, sd 150 ft. Resource Oil Co.'s Otto Lanbeck 1, J. M. Salinas sur, 3 mi w Gonzales, sp and sd.

GUADALUPE COUNTY—J. E. Clark's J. F. Larison 1, G. DeWitt sur, ab 16, 330 ft sw Clark's Lay 1, sp. F. N. Gallagher's W. B. Lay 1, J. K. Davis sur, lcn. Gode et al's Hicks 1, E. de los Santos Coy, set 8¼ in csg 1135 ft. Grace et al's O. S. Ogletree 1, Robt. Smith sur, 1 mi sw Prairie Lea, td 2245 ft, ru to dd. Jim Harper et al's J. Z. Fulcher 3, Robt. Smith sur, 2 mi sw Prairie Lea, sd 200 ft. Inter-Allied Pet. Corp.'s Wells Ranch 1, making lcn. A. D. Locke's Mrs. N. S. Lowman C. Campbell League, 1½ mi nw Stephen, sd 1810 ft. Minerals Corp. of Texas' Allen Phillips 1, Cortines sur, 10 mi sw Seguin, sd 868 ft. Suttle et al's Baenzinger 1, A. O. Manchola sur, sd 2155 ft. W. A. Scrutchins A. H. Smith 1, J. B. Cowan sur, W. Staples, sd 765 ft.

HIDALGO COUNTY—Cortez Oil Co.'s F. B. Guerra 1, tr 12, por 41, ne of Samfordyce field, sp and set 200 ft sur csg, re-dr. D. M. C. Oil Co.'s Daskem 1, blk 34, por 45, 4½ mi ne Samfordyce field, td 4114 ft sand 4090-4114 ft, 5 in csg set 4074 ft, cement liner to td, perf 4105-14 ft, swabbed, sw, abd. S. J. Sloan et al's Brock & Showers 1, lot 9, blk 16, por 80, Juris. of Reynosa, w of Mission, dr 2540 ft. Stevens & Mundy's F. B. Guerra 1, tr 12, por 41, 2000 ft n Samfordyce field, cored gas sand 7661-2701 ft, shale 2701-37 ft, gas sand 2737-40 ft, oil sand 2740-52 ft, sand and shale streaks 2752-2890 ft, making electric formation test to td 2890 ft before completing. Union Sulphur Co.'s ARGL&I Co. 4, lot 1, blk 99, N. Capisallo district, Llano Grande gr, 1½ mi sw discovery, coring 7561 ft; ARGL&I Co. 5, lot 2082, N. Capisallo district, Llano Grande gr, dr 5560 ft.

JIM HOGG COUNTY—Macon Pet. Co.'s Y. Gomez 1, 990 ft sl, 330 ft wl of sec 1005, sp. Miller et al's Yeager 1, blk 6, sec 20, fsh 3530 ft. Phillips et al's Allen 1, blk 293, Pippin sub, Randado gr, sd 42 ft. G. C. Rankins' Vela 1, blk 6, sec 5, sp and comp ru.

KARNES COUNTY — Mart Pet. Corp.'s Cochran 1, McConnell League, sp and sd.

KENDALL COUNTY — J. E. Freeman's Gerfer's 1, Mark Hodgson sur, No. 796, sd 102 ft. Southwestern Dev. Synd,. Ltd.'s Willie Werner 1, Torrey sur, No. 781, Sisterdale area, td 710 ft, sd 650 ft, sdtr hole.

KERR COUNTY—Jeff Love & Eastland Oil Co.'s Jeff Love 5-E, Martinez sur, sec 1594, ½ mi se original Love Ranch test, sd 5625 ft.

KLEBERG COUNTY—Harry Clark's W. S. Rogers 1, lot 1, blk 36, Kleberg sub, sd 750 ft. Fidelity Exploration Co. Synd.'s Paul O'Henry 1, lot 2, sec 49, KT&I sur, td 3027 ft, pb and set 7 in csg 2694 ft, pb 2640 ft, testing. R. G. Flato, Trustee 1, blk 14, sec 40, KT&I sur, Kingsville area, lcn. Parr & Ponder's Sam Michalk et al 1, lot 5, blk 37, KT&I sur, sd 1983 ft.

LAVACA COUNTY—Wheelock & Collins' Pohl 1, Moses Wooten sur, 12 mi se Hallettsville, coring 2980 ft.

LEE COUNTY—Douglas Spivey et al's First Nat'l Bank (T. S. Henderson) 1, Wm. Mock sur, lcn.

LIVE OAK COUNTY — Benco Oil Co.'s Eliz Mahoney 1, Mark Killely sur, 3 mi w Three Rivers, sd 78 ft. Earl Callaway et al's W. R. Lyne 1, se c 74, M. M. Lyne sur, ab 763, lcn; Mcozegemba 1, lot 122, Geo Est sub, blk A, ab 113, S. L. Willams sur, lcn; Geo. West Heirs 1, sec 255, BS&F sur, ab 113, Pettus sand 4020-29 ft, sw Yegua sand, 4192 ft. sw, now dr 4410 ft. Henderson Coquat's L. A. Reagan 1, McGloin sur, dr 4150 ft. last rept. Conway & Buescher's Sanger 1, GC&SF sur No. 383, ab 636, 15 mi sw George West, sp. Houston Oil Co.'s G. Frederick 1, blk 16, Jane Curry sur, North Lucas area, dr 5400 ft; Frederick 2, blk 19, Jane curry sur, ru; Frederick 3, blk 9, Jane Curry sur, dr 4075 ft. George R. Pinkley et al's L. Jacob Corp. 1, se sec 3, GH&H sur, 2 mi e Jacob field, dry and abd 1259 ft. Smith & Story's Dinero Townsite 1-A, Jane Curry sur, North Lucas area, dr 4735 ft.

MAVERICK COUNTY — Thompson & Streeter's Joseph Wipff 1, sec 18, 7 mi w Chittim field, 10 mi n Eagle Pass, sd 220 ft.

McMULLEN COUNTY—Aransas Oil Co.'s M. H. Reed 1, J. A. Spicer sur No. 70, 12 mi sw Tilden, sd 1681 ft. Bussa Oil Company of Texas' F. B. Horton 1, James A. Jean sur, No. 20, 3 mi sw Tilden, dr 850 ft, Mirando sand 665-70 ft, show gas. Carruth & Hagen's Gus Langel, M. Hely sur, 2 mi se Calliham field, td 1403 ft, pb to gas sand 1123-42 ft. L. O. Gleason's Fitzpatrick 1, J. A. Loving sur No. 52, set 40 ft sur csg, re-dr. Howard & Carpenter's Jungman 1, M. Hely sur, sd 1210 ft. Lucky Strike Oil Co.'s H. L. Lark, blk 114, Lark sub, E. W. B. Scrugham sur, completing 1042 ft. L. D. Ormsby's Griffith 4, Osborne sur No. 50, sd 122 ft, Griffith 5, Osborne sur No. 50, set sur csg, wocs. C. W. Points et al's Fahler 1, Geo. Pittuck sur, 5 mi w Calliham, re-cement 1004 ft. Stephenson & Wuest's Fisher 1, R. O. O'Boyle sur, nw of Calliham, sp. Wilkerson & Lightfoot No. 6 H. L. Lark, blk 113, Lark sub, Scrugham sur, sd 20 ft.

MEDINA COUNTY—Frank A. Brown's A. E. Brueks 1, John Ward sur, dr 175 ft. Caroco Oil Co.'s (Callahan & Roberts) H. Taylor 1, A. Brushet sur No. 135, 5 mi sw Hondo, temp abd 30 ft; Taylor 2, A. Brushet sur No. 135, dr 220 ft. Joe Dupree's Hugo Batot 1, John Ball sur No. 1478, 7 mi sw Hondo, temp abd 795 ft; Hugo Batot 2, 260 ft el, 1350 ft nl of 160-ac tr, John Ball sur No. 1478, 8 mi sw Hondo, dr 75 ft. E. J. Deupree's L. J. Brucks 1, 404 ft nl, 165 ft el of Henry Castro sur No. 248, dr 234 ft. Gates & Hill's Odom 2, H. Castro sur No. 174, 5 mi sw Hondo, dr 270 ft. Letro Oil Corp.'s F. B. Forest 1, sec 69, 1½ mi ne Ina field, 1½ mi Adams field, sd 20 ft.

NUECES COUNTY—A. F. Holliday's F. J. Smith 2-A, CEPI&N sur, Saxet area, sand 5785-92 ft, dst 40 ft oil, 400 lbs pressure, ¼ and ⅝ choke, set 7 in csg 5785 ft, dr out plugs. La Jita Corp.'s Richard King Est. 1, se¼ sec 22, Richard King Ranch sub, ne discovery well, King field, coring 3590 ft. Magnolia Pet. Co.'s Bobby Baldwin 2, BS&F sur No. 165, 3000 ft sw discovery, cored dry sand 3338-40 ft, now dd; Bobby Baldwin 3, BS&F sur No. 165, set 1000 ft sur csg. Richardson & Thomas' Page Bros. 1, Geo. Franks sub, w Saxet field, dr 4025 ft. Texon Royalty Co. et al's L. M. Vance 1, Thos. Gallagher sur, ab 988, ¾ mi s Saxet field, fsh for core bbl 5495 ft. Violet Oil Co.'s J. W. Gallagher 1, John H. Smith sur No. 25, dr 1500 ft. N. M. Wilson's Bluntzer 1, sh 6, Bluntz Lands, Casa Blanca gr, 10 mi n Banquette, no rept.

REAL COUNTY—H. J. Heartwell et al's L. J. Haby 2, AB&M sur No. 175, td 3210 ft, dr out junk.

REFUGIO COUNTY—Quintana Pet. Corp.'s Tom O'Connor 15-A, Swisher sur No. 4, Tomoconnor field, td 8174 ft, pb and set 7 in csg 5953 ft, perf between 5740 and 5854 ft, comp 155 BPD ⅛ ch. United Prod. Co.'s M. F. Lambert 2-A, Harper sur, Greta, td 6557 ft, pb and completing in 3500 ft sand; Lambert 9, blk 17, Hardwick sur, td 6718 ft, pb and completing 5477 ft.

SAN PATRICIO COUNTY—Argo Royalty Co. & Willie Storm's Nancy Hobbs 1, Delgado gr, 1 mi s Mathis, dr 3000 ft. Heep Oil Co.'s E. H. Welder 1-F, sec 46, Welder sub, Plymouth area, oil sand 5625-46 ft, comp 11 BPH ⅛ ch, TP 640 lbs, CP 920 lbs; E. H. Welder 2-F, 466 ft sl and el sec 46, ru. Plymouth Oil Co.'s E. H. Welder 13-C, sec 49, Welder sub, n Plymouth field, dr 4850 ft.

STARR COUNTY—Barnsdall Oil Co. & Phillips Petroleum Corp.'s Yturri Land & Cattle Co. 1, 330 ft sl and el 110-ac tr, por 100, 660 ft nw of Samfordyce production, sp. C. R. Borah et al's A. Guerra 1, sh 6, San Jose gr, 2 mi n La Reforma, temp abd 3517 ft. Terry Hornaday's Doyno & Chatfield 1, blk 4, tr 21, por 80, w Rio Grande City field, dry and abd 1449 ft. A. Nix et al's Starr County Cattle Co. 1, blk 58, JL sub, por 89, sw Barbacoas field, dry and abd 2830 ft. Pedernal Oil Co.'s Hicks & Phelps 1, El Pedernal gr, sd 2224 ft; Sarah Welch 1, lot 3, Welch sub, El Pedernal gr, dr 1120 ft. Hiriam Reed's Doyno-Chatfield 1-A, blk 2, tr 21, por 80, 1600 ft nw Rio Grande City field, dr 2850 ft.

TRAVIS COUNTY—G. A. Arts' Rolff 1, Thos. Hancock sur No. 20, ½ mi n Sweden, sd 860 ft. W. F. Billingsly's Lungrin, Kimbro sur, blk 17, cored serpentine 660-70 ft, com-

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pleting. R. C. Hill's S. A. Johnson 1, John Hahn sur, dry and abd 1100 ft.

VICTORIA COUNTY—Eastern Texas Oil Co.'s Henderson & Pickering 1, blk 19, Benavides sur, Placedo area, owwo, reinstated, formerly abnd 6029 ft, 7 in csg set 4806 ft, pb 4700 ft now dr out to 4747 ft, will perf 4744-47 ft and test; J. E. Schovajsa 1, lot 14, Rupley sur, Placedo area, owdd, former td 4789 ft, completed at this level, but made too much gas, ru to dd to 6000 ft sand. Gillespie & Superior's Brandt 2, lot 11, Rupley sur, Placedo field, sand 4734-45 ft, comp 45 BPD ¼ ch. Martex Oil Co.'s Mitchell 1, E. Benevides sur, ¾ mi se Placedo discovery, td 6050 ft, PD 5339 ft, completing. E. L. Smith Oil Co. et al's M. Lala 1, lot 13, Rupley sur, Placedo area, sand 6008-11 ft, 7 in csg set 6002 ft, comp 11 BPH 3/16 in ch, TP 1080 lbs, CP 800 lbs. Sun Oil Co.'s J. J. Marek 1, SA&MG Ry. sur No. 9, Placedo area, sand 4762-71 ft, oil and gas show, hard sandy shale 4771-74½ ft, sand showing o&g 4774-77 ft, dst 4757-77 ft, show 18 joints mud, sand and oil 20 minutes through ¼ in ch, prep to comp. The Texas Co. et al's J. J. Warden 1, Edward McDonough League, 12 mi s Victoria, dr 4520 ft, dst 4488-4502 ft, show 275 lbs gas pressure 15 min.

WEBB COUNTY—Rose B. Barnhardt's de la Garza 1A, sec 262, 2 mi n Carolina-Texas field, ru. Mills Bennett's F. Lopez 1, ne¼ sw¼ sec 724, dr 2738 ft. D. E. C. Oil Co.'s Slator Ranch 1, blk 29, Mission Oil Company sub, Slator Ranch, J. S. Borrego gr, lcn. O. W. Killam's A. M. Bruni 39, blk 50, sec 15, Foltz sub, Mariano Arispe gr, 1 mi sw Cole 2700 ft prod, coring 3100 ft. R. E. Misner's Garcia 1, se¼ sec 457, ru. Senator James Neal et al's Laurel 1, sec 1119, CCSD&RGNG sur, 3 mi e Mirando City field, lcn. South Texas Oil Co.'s Laurel 1-A, blk 2, sur No. 269, Laurel area, sd 2390 ft. W. H. Vernor, Tr.'s Jeffries Ranch 1, blk 13, sec 1453, 30 mi nw Laredo, set 40 ft 10 in csg and sd. A. H. Wray's Geo. Steumpke 1, sh 1, Brewster Pasture, Joaquin Galan grant, td 1156 ft, mir.

WILLACY COUNTY — King-Woods Oil Co.'s Stillman Ranch 1, lot 16, blk 30, sh 44, Stillman Ranch sur, San Juan Carricitos gr, dr 5650 ft. L & S Drlg. Co. & South Texas Dev. Co.'s F. Armendiez 1-A, Little Share 4, dr 5100 ft.

WILLIAMSON COUNTY—Fuch & Walters' F. Ollman 1, Bevil sur No. 56, sd 875 ft. Glass Bros.' A. Albertson 1, P. Coursey sur, sd 260 ft. H. F. Goff et al's A. Klotz 1, W. Cartwright sur, sd 1210 ft. S. W. Graham's Pfluger 1, 450 ft wl and midway between nl and northerly sl of 176-ac tr, Jordan sur, dry and abd 1040 ft, top Austin chalk 1030 ft. Kophman et al's Kruger 1, B. G. Bevil sur No. 56, N. Byersville field, sd 650 ft. Rule et al's Bochmeyer (Rummell) P. Cartwright's sur, sd 800 ft.

ZAPATA COUNTY—H. F. Crow's Yzaguirre 1, sh 17, por 15, Lopena area, dr 325 ft. Humble O&R Co.'s E. Dominguez 1, por 31, td 4879 ft, ds stuck 820 ft. Kenrow & Co.'s Pedro de los Santos 1, sh 26, Fansler Part, Comitas gr, dr 3150 ft. J. J. O'Hern et al's S. Vela 1, 3420 ft nel, 330 ft sel of blk 2, por 27, 7 mi ne of Charco Redondo field, lcn. Joe Palmer's Emma Markrud 1, blk 22, sec 616, dr 1285 ft. Duke Phillips L. Gutierrez 1, blk 21, La Huerta gr, 6 mi sw Escobas field, dr 3200 ft.

TEXAS GULF COAST

ANGELINA COUNTY—Lee-Tex Oil Co.'s Thompson 1, w of Guissler 1, W. W. Hales sur, abd 2324 ft. Neil Scroggins Norton Properties 1, Wm. Johnson sur, woc 40 ft. The Hunter Co.'s Long Bell Lbr. Co. 1, w of Boynton 1, J. Fulcher sur, dr shale 1575 ft.

AUSTIN COUNTY — Deering & Kayser's McClenton 1, se of Bellville, T. Bell sur, dr shale 3187 ft. R. L. Wheelock et al's Harrigal 1, w of Bellville, B. Babbitt sur, dr shale 3363 ft.

BRAZORIA COUNTY—Harrison & Abercrombie's Bernard River Land Co. 2, Old Ocean, C. Breen sur, fsh 7040 ft.

CHAMBERS COUNTY—J. L. Johnson & W. F. Anderson's White 1, 2 mi n of Anahuac field, J. McGhehe sur, lcn. C. B. Bunte's Simon 1, 4½ mi ne of Anahuac field, T&NO sur, sec 33, dr sand 6085 ft. Woodley Pet. Co.'s A. G. Blanke 1, ¾ mi ne of Anahuac field, H&TC sur, sec 41, dk.

HARRIS COUNTY—E. E. Young's Griffith 2, w of Humble, A. R. Bodeman sur, sd 2900 ft.

JEFFERSON COUNTY—Humble's B. White 1, McFadden, C. F. Cade sur, woc 2559 ft. Sun's Hebert & Broussard 1, s of Lovall Lake, B. Blackmon sur, dr sandy shale 7505 ft.

LIBERTY COUNTY—A. L. Maxwell et al's M. P. Hinchcliff 1, 2 mi ne of Cleveland, H. & T. C. sur No. 105, sd 5574 ft.

MONTGOMERY COUNTY—All wells in the county sd.

TRINITY COUNTY — Gulf's Trinity Lbr. Co. 1, nwc of county, O. Peterson sur, dr shale 2408 ft.

SAN JACINTO COUNTY—Darby-Jones-McBee Drilling Co.'s J. R. Bennett 1-A, D. Beer sur, losing returns at 4320 ft.

WASHINGTON COUNTY—C. J. Lass et al's T. Weinert 1, se of Burton, T. T. Borden sur, dr shale 3230 ft.

WHARTON COUNTY—Navarro Oil Co.'s E. P. Schoelman 1, Mancha prospect, N. Mancha sur, dr shale 5084 ft. Pure's E. Page 1, Blue Basin prospect, E. Piere sur, ru. Sterling Oil & Refining Co.'s F. Janek 1, East Bernard prospect, J. Scott sur, dr salt water sand 7604 ft. Texas Co.'s Pierce C-1, 3 mi se of Pickett Ridge field, J. Caldwell sur, dk.

WYOMING

BIG HORN COUNTY—J. H. Shafer's No. 1, sw sw sw 8-49n-91w, is dr 1365 ft. J. W. Bales et al's Parker 1, sw sw 23-49n-98w, is dr 400 ft.

CARBON COUNTY—General's Whitford 1, sw se ne 24-20n-84w, coring 5140 ft.

CONVERSE COUNTY—Chadron-Osage Oil Co. State 1, cse 16-32n-69w, running 12½ in. csg 1000 ft.

CROOK COUNTY—M. D. Miller's (formerly Keystone Unit's) Kinter 1, n½ ne se 13-52n-62w, dr 1381 ft.

FREMONT COUNTY — Monongahela Oil Co. & Sidney H. Keoughan's Wisda 1, ne se 13-26n-103w, fsg drill pipe 4515 ft.

NIOBRARA COUNTY—Shogren & Huntgren's Olinger 1-A, cne ne se 1-36n-63w, sd 1650 ft. Riggs Oil Co.'s Spaugh 1, nw se 5-33n-65w, dr 400 ft.

MONTANA

BIG HORN COUNTY—Enterprise Oil Co. and Norbeck Drilling Co.'s Lynde 2, sw nw se 21-6s-35e, dr 3610 ft.

CARBON COUNTY—Bailey Round Butte Oil Co.'s Test 1, ne se 3-6s-23e, dr 1439 ft.

FERGUS COUNTY—Emmons et al's 1, ne se 6-20n-18e, dr 1443 ft. Judith Operating Co.'s Government 1, csw sw 26-22n-17e, dr 500 ft.

GALLATIN COUNTY — Montana Gas & Pet. Co.'s Tice 1, ne ne ne 28-1n-2e, dr 2000 ft.

STILLWATER COUNTY — Continental's Parker 1, se sw 25-5s-17e, lcn.

PONDERA COUNTY—Texas Co.'s Unit-5-1 csw sw 3-30n-5w, dr 2560 ft.

Catalogs . . . Bulletins

Bearings

SKF Industries, Philadelphia, is ready to distribute a 32-page catalog describing the ball and roller bearing transmission appliances released by the organization. The catalog shows interesting load ratings and diagrams of mountings for ball and roller bearing pillow blocks, flanged housings, take-up boxes, post and drop hangers, floor stands, replace boxes, locknuts and lockwashers.

Speed Reducers

Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin, has issued Leaflet No. 203, describing the "gearmotor" speed reducers manufactured by the company. It will be mailed upon request.

Air Compressors

Worthington Pump and Machinery Corporation, Harrison, New Jersey, has announced through Bulletin No. F-3512 that four models of the Aero-2-Stage portable compressors for delivering 105, 160, 210 and 315 cubic feet of gas per minute are available.

Valves

The Fairbanks Company, Boston, New York and Pittsburgh, has issued Catalog No. 21, an attractive booklet describing the bronze and iron valves manufactured by the company.

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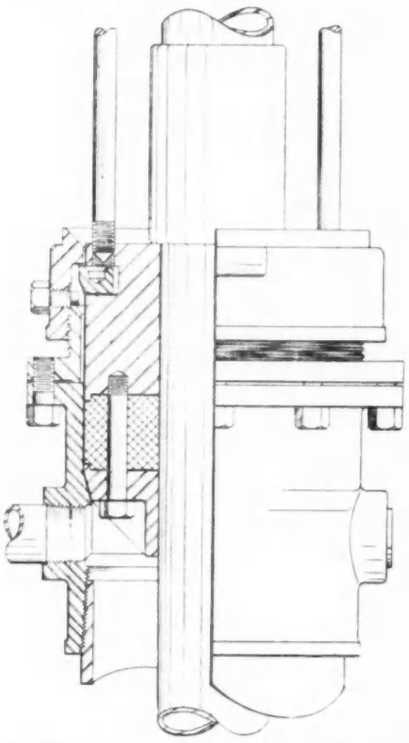
Machinery • Tools • Catalogs • Books

BRADEN HEAD AND TUBING HEAD

J. H. McEvoy & Company

J. H. McEvoy & Company, Houston, has announced the McEvoy "po boy" head, a braden head and tubing head combination, as an economical and dependable unit for fields where pressures do not exceed 1000 pounds.



McEvoy bradenhead section used as blow-out preventer by using McEvoy, Hosmer patent, automatic assembly.

As a braden head, it is a full opening type permitting full gauge bits to pass through it. The braden head body in conjunction with the use of a special adapter and lip ring can be used as a regular Hosmer type blowout preventer. The braden head body can be installed on surface casing or swaged to surface casing and made up permanently before drilling plug.

As a tubing head, the head part also has full opening which permits entrance of bit. Having standard bowl diameter, it can be used as a blowout preventer when running tubing or drilling, when used with a McEvoy Auto-Lock packing assembly.

Full blowout protection for standard well completion is provided from the time the surface casing is cemented through the landing of tubing and installing of Christmas tree, the manufacturer claims.

The collar type suspension is standard for these heads. Slip type suspension can be furnished on request at a slight additional cost. The head furnishes a compact, rugged, and economical base for the Christmas tree. The company manufactures custom-built trees using these heads as a base. The heads are available in 10¾-inch A.P.I. sizes to fit any size long string casings from five-inch O.D. to seven-inch O.D. and for two-inch, 2½-inch or three-inch regular or upset tubing, stock sizes. They are made of chrome nickel cast steel and are available in 1000-pound and 2000-pound test pressures.

ORIFICE

Daniel Orifice Fitting Company

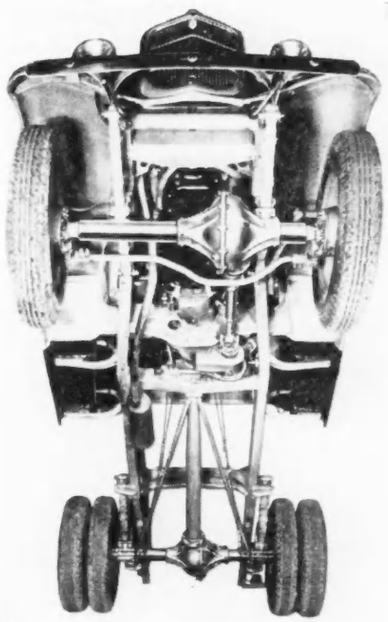
Daniel Orifice Fitting Company, Los Angeles, has announced the new Daniel Insert or Wafer Plate, an orifice plate of stainless steel that eliminates loss when the conventional type of plate wears out. A simple machine operation converts the wornout plate into a holder which takes the wafer plate. Additional information can be obtained from the manufacturer.

Daniel Orifice

ROTARY HOSE

E. M. Smith Company

E. M. Smith Company, Los Angeles, has announced development of "Grizzly Powerflex", a new type rotary hose for oil well drilling operations. The manufacturer claims that this steel armored hose is strong and tough, yet flexible enough to absorb the hammering pulsations of the pump without being affected by the strain. The hose is built to withstand pressures far greater than are usually encountered in oil well drilling, it is claimed. A full 2½-inch opening permits free circulation and minimizes friction, thus adding to the life of the hose.



Front-wheel driving mechanism of the Marmon-Herrington all-wheel drive Ford V-8 Truck

FOUR WHEEL DRIVE FOR FORD

Marmon-Herrington Company, Inc.

Marmon-Herrington Company, Incorporated, Indianapolis, Indiana, announces a four-wheel drive for the Ford V-8 and results of the trial run of the new hook-up.

The manufacturers claim that a 244.4 mile run over state and national highways, partly hilly and partly flat run, was made in less than eight hours. The truck hauled a trailer on which was loaded a track-laying vehicle trailer and load weighing 13,720 pounds. Gasoline consumed totaled 46 gallons; oil used amounted to less than one ounce, and water consumption was 1.75 pints.

The new drive for the V-8 is called model B-5-4 and has a two-speed auxiliary transmission, giving eight speeds forward and two speeds reverse.

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This Week with the Industry's EQUIPMENT SUPPLIERS

Victaulic, Inc., to Serve California Oil Operating Companies

Announcement is made of the formation of Victaulic, Inc., who will handle products of Victaulic Company of America and Hanlon-Waters, Inc., in California. Offices of the company are situated in the Roosevelt Building, 727 West Seventh Street, Los Angeles. Gene McIntyre, who is well-known to the California pipe trade, is in charge of sales.

Victaulic couplings combine the features of a straight line coupling, a flexible coupling, an expansion joint and a mechanically locked joint.

Victaulic, Inc., will also handle the Hanlon-Waters line of oil field equipment manufactured in Tulsa, Oklahoma, and including oil and gas separators, automatic regulating and control equipment, load binders and gauge cocks.

Fred E. Cooper Moves to New and Larger Building

Fred E. Cooper Company, designers and distributors for Allis-Chalmers oil well pulling and servicing equipment, now is occupying its new factory building. Cooper in June purchased the old Compression Tube Company building at Hale Station, between Sand Springs and Tulsa, and has remodeled it to suit his requirements.

Fred E. Cooper started designing winches and other heavy-duty pulling equipment 18 years ago for the old Rumley organization. At the time there were two employes, and the building occupied at Perry, Oklahoma, was only 20 by 40 feet. Eleven years ago he moved the business to Tulsa and it occupied quarters at 18 South Madison Avenue, and the building measured 25 by 80 feet. About three years ago it was moved to 211 South Lansing, Tulsa, and occupied a site 50 by 140 feet. The new building at Hale Station measures 85 by 408 feet and is two stories high.

The concern employes some 50 persons, most of whom are skilled mechanics, directly engaged in designing, sales and servicing of equipment.

Rae F. Bell Made Vice President of A. O. Smith

The board of directors of A. O. Smith Corporation, through Rae F. Bell, executive vice president, have announced the election of Carl C. Joys, Jr., to the office of vice president of the corporation.

Mr. Joys has been connected with A. O. Smith Corporation since August 1, 1924, as manager of sales, and later in the capacity of director of sales of the oil and gas products division and all other products aside from the automotive division and has devoted his entire time to these lines. He will continue this work in his new position as vice president.

Mr. Joys has been a director of the corporation since October, 1927.

Above is shown the new home of Thornhill-Craver Company, manufacturers of Unibolt, the one bolt coupling. This site, 3016 Polk Avenue, Houston, is the factory and sales headquarters of the company following their move August 20, and represents an increase of more than 300 percent in space required by the growth during the past year.

BEN K. STROUD

Ben K. Stroud Joins Jones & Laughlin

Ben K. Stroud has joined the sales force of the Los Angeles office of Jones & Laughlin Steel Corporation it was announced September 3 by officials of the corporation. Since 1923 he has been in charge of the oil field engineering and service in California fields for National Tube Company.

Stroud, a native Californian, after graduation from the University of California served for several years with the Louisiana State Department of Conservation in charge of oil and gas resources.

Landis European Manager Visiting in United States

J. M. McNeal, European sales manager in England and Continental Europe for Landis Machine Company, is visiting the home office at Waynesboro, Pa.

While in the United States, Mr. McNeal will attend the National Machine Tool Builders' Exposition at Cleveland.

Oil Engineering Book Mentions Sand-Banum

In a recently published book entitled "The Care and Operation of Internal Combustion Engines," which has been prepared for one of the vocational training courses, Petroleum Industry Series, American Sand-Banum Company, Inc., points with pride to the fact that the only commercial product mentioned by name is "Sand-Banum."

"The following quotation from this book," says L. Bradie of American Sand-Banum Company, Inc., "is of particular interest." The authors of this book say:

"Sand-Banum is a commercial product which was introduced into the oil fields about four years ago. It is a vegetable compound extracted from tropical gums and resins. Its action is mechanical not chemical. It penetrates scale that has formed and breaks it down to go back into the water in suspension. Its makers claim that, since its action is mechanical, that it works equally well with all kinds of water."

This book was developed under the sponsorship of the American Petroleum Institute and the State Departments of Industrial Education of Texas.

Shand and Jurs Company Makes New Appointment

Shand and Jurs Company, Berkeley, California, has appointed B & C Specialty Company, Tulsa, as its representative in Oklahoma and Kansas. T. M. Christley, formerly with Shell Petroleum Corporation, is the manager.

J. H. Brown With Worthington Pump & Machinery Corporation

J. H. Brown, formerly eastern sales manager of Sullivan Machinery Company, has joined Worthington Pump and Machinery Corporation as regional manager of its mining and construction division, covering the midwestern territory, with headquarters in Chicago.

Mr. Brown is a graduate of Massachusetts Institute of Technology, class of 1905. During the N. R. A. period he served as a member of the Code Authority of the Compressed Air Institute. Widely known in construction and mining circles, he brings to Worthington a long experience in the manufacture and sale of equipment for these fields.

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Squeaks from the Bull Wheel

Unit

"My brothers work as one."

"Mine do too. One man could do the work of all four."

Not Saturday

He (with her): Have you a room and bath for wife and me?

Hotel Clerk: We have double rooms, but none with bath.

He (to her): Will that he all right?

She: Yes, mister.

Oblivion

They were discussing the nature of love. "To me love is peace, quiet, tranquility," said she.

"That's not love," said he, "that's sleep."

Needle Work

"I hear you did a lot of needlework at the nudist colony."

"First I'd take splinters out of the others, and then they'd take 'em out of me."

50-50

Mr. McGinnis was taking his first ride in an airplane. As they were flying over a baseball game, and when they were about 4000 feet up, the plane suddenly went into a nosedive.

The pilot laughed as he pulled the plane out of the dive at 1500 feet: "Half of the people down there thought we were falling."

"Sure," groaned McGinnis, "and half of the people up here thought so, too."

Snappy Back

Wise Guy: "Is that a dray horse you have there?"

Race Horse Owner: "No, it's a brown horse, and stop your baby talk."

Cheated

Judge: "You are charged with voting three times. What have you got to say about it?"

Plaintiff: "I've been gypped. They only paid me for once."

Inspector

"Tell me, do you ever expect to find the perfect girl?"

"No, but it's a lot of fun making sure they're not."

If Looks Count

Rag Merchant—Any beer bottles, lady?

Lady—Do I look as if I drank beer?

Rag Merchant—Well, vinegar bottles, lady?

Regards to Him

The nice old lady was finally prevailed upon to try a glass of cold beer. Feeling very wicked and worldly and being away from home where none of the neighbor ladies would hear about it, she consented.

The dear old soul sat sipping the glass of amber fluid for a moment, then looked up with a puzzled air. "How queer," she said, "it tastes just like the medicine my husband has been taking for the last 13 years."

Poor John

Gladys: "Boo-hoo, grandma, I'm engaged to John, but he just can't bear children."

Grandma: "There, there, dear we cannot expect too much from husbands."

Plenty

"Gimme a dime, will ya, guvnor. I wanna go into this classy restaurant."

"Why, you poor fellow, what can you get for a dime in that high-toned place?"

"A cup of coffee, some silverware, a linen napkin and a new hat."

She Was

A man wandered into a tennis tournament the other dav and sat down on the bench.

"Whose game?" he asked.

A shy young thing sitting next to him looked up hopefully.

"I am," she replied.

Specialist

Inquisitive Lady: "Sir, what kind of an officer are you?"

Doctor: "I'm a naval surgeon."

Inquisitive Lady: "My goodness! How you doctors do specialize."

Joneses Next Door

Mr. Newlywed—"I wonder why it is we can't save anything."

Mrs. Newlywed—"It's the neighbors, dear; they are always doing something we can't afford."

No Nerve

Clara (the dentist's daughter)—"Well, dear, have you asked dad for my hand yet?"

Bashful Henry—"No, every time I step into his office I lose my nerve. I've just allowed him to pull another tooth."

Safe in Jail

Convict: "The next time you bring a pie to me, smuggle a small saw in here with it."

Wife: "Oh, you want to saw your bars?"

Convict: "No, I'll want to saw through your pie!"

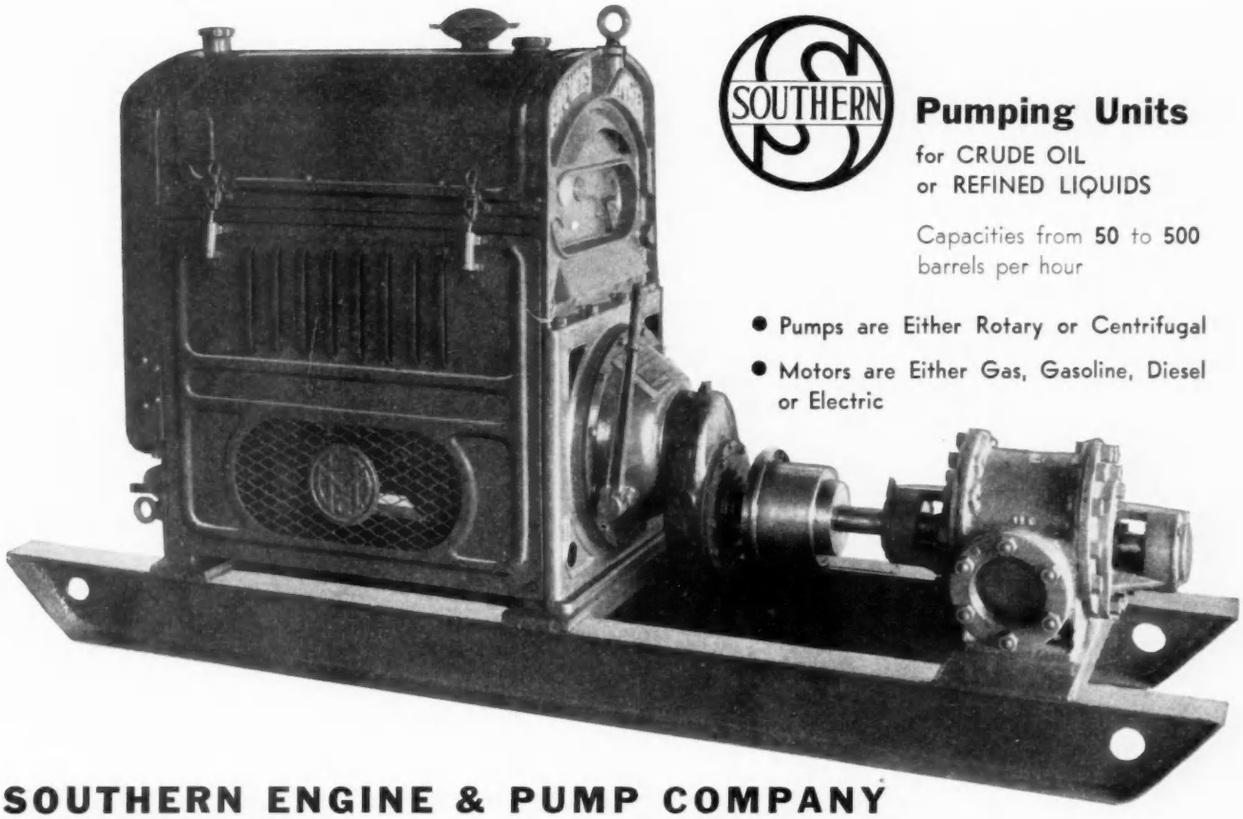
Double Check

Don't ever try to fool your mother, boys, it can't be done. Remember the young man who pawned his nice suit of clothes and didn't want his mother to know anything about it? He finally redeemed them and brought them home in a suitcase. While he was busy in his room, his mother, in the parlor, started to unpack the suitcase. She found a pawn ticket on the coat and called:

"John, what is this tag on your coat?"

John lost very little time in calling back: "Oh, I was at a dance last night, mother, and checked my coat."

A moment later mother came across the trousers, tagged in the same way. With a puzzled tone she asked: "John, what kind of a dance was that?"



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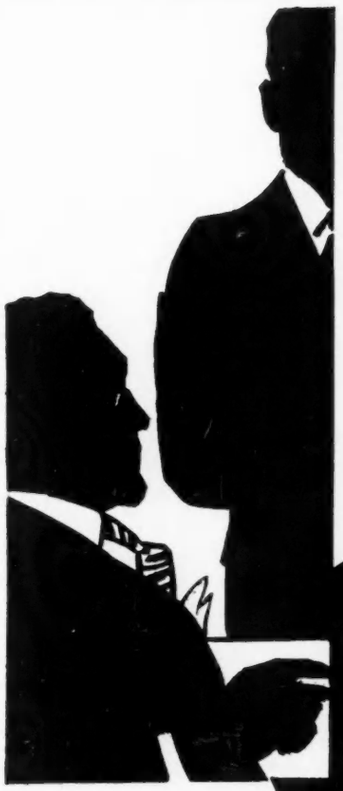

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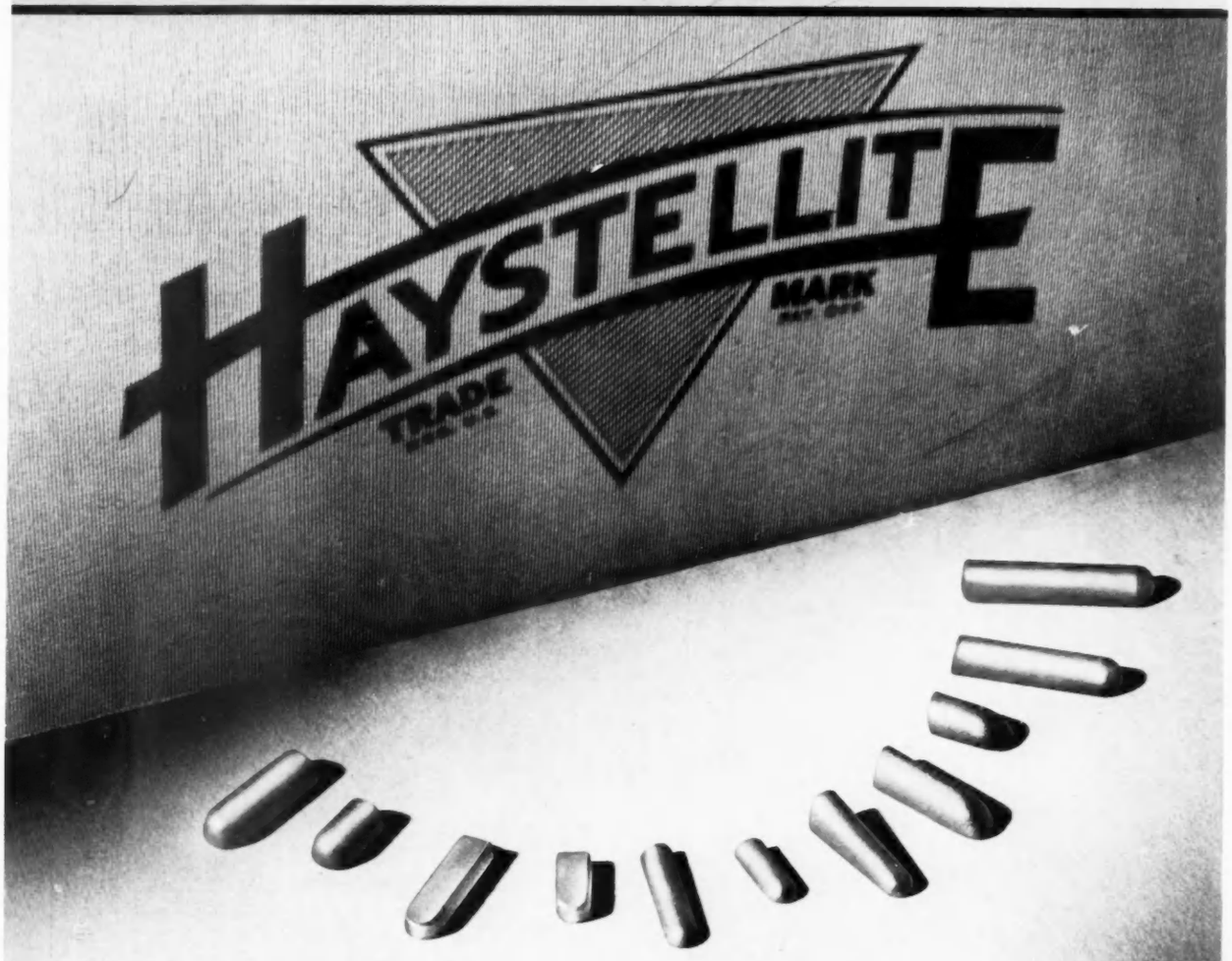

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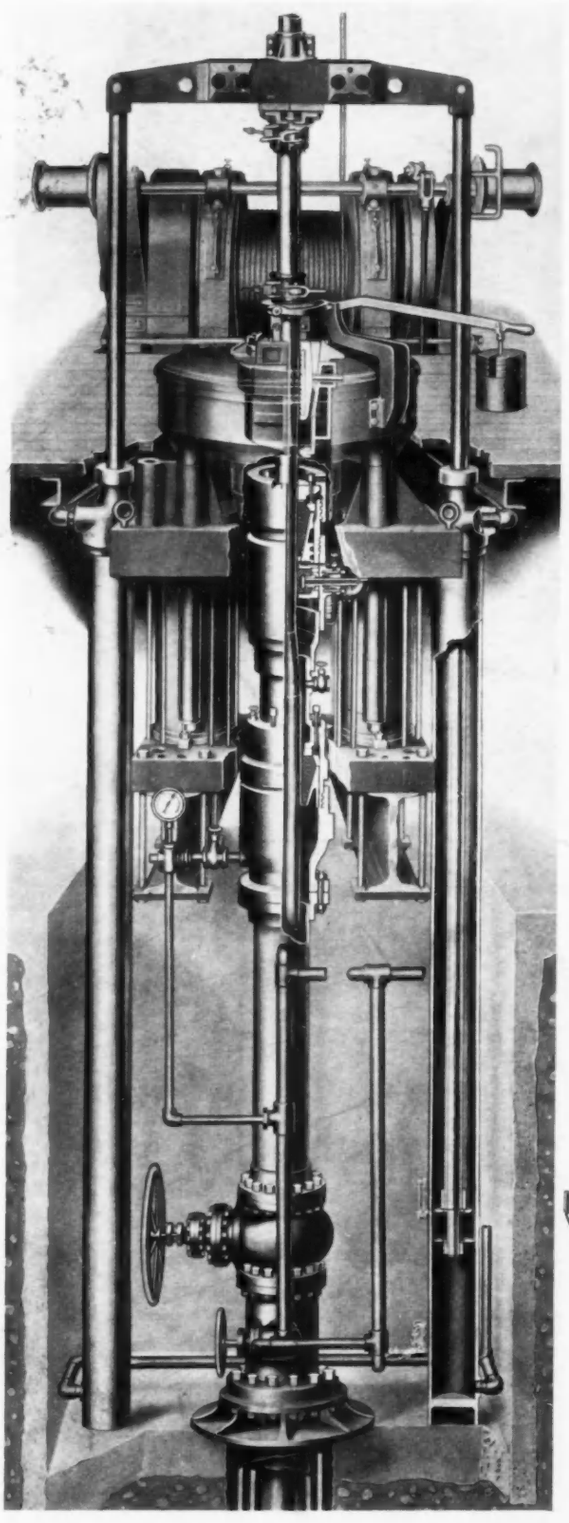

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